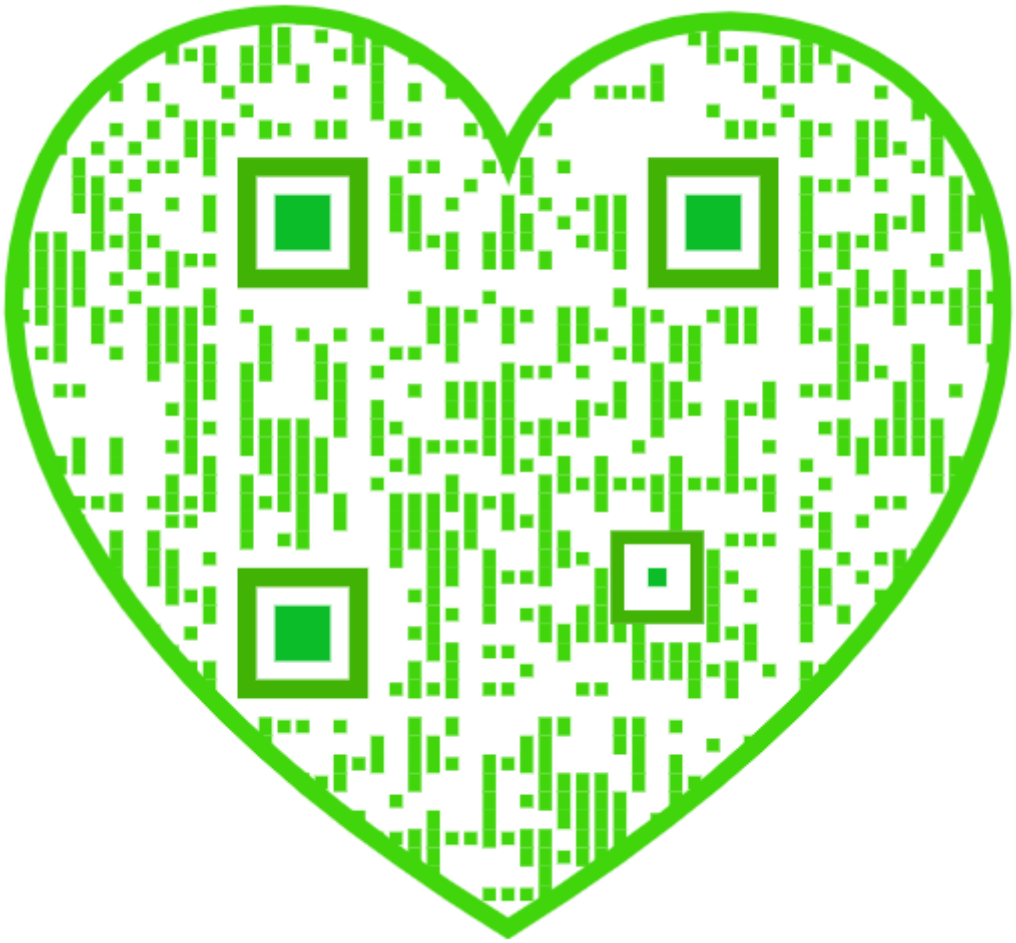

JOHN A. SEAVERNS

SATIRIST

THE IMPROVED

ART OF FARRIERY:

CONTAINING

A COMPLETE VIEW OF THE STRUCTURE AND ECONOMY

OF

THE HORSE,

DIRECTIONS FOR FEEDING, GROOMING, SHOEING, &c.
AND THE MANAGEMENT OF THE STABLE;

THE NATURE, SYMPTOMS, AND TREATMENT OF ALL DISEASES

INCIDENTAL TO

HORSES, NEAT CATTLE, AND SHEEP;

AND A TREATISE ON

RACERS, HUNTERS, AND DOGS

OF EVERY DESCRIPTION.

COMPILED FROM THE WORKS OF THE LATE

JAMES WHITE,

AND COMPLETED TO THE PRESENT STATE OF VETERINARY SCIENCE,

BY W. H. ROSSER,

VETERINARY SURGEON

LONDON:

HENRY G. BOHN, YORK STREET, COVENT GARDEN

1857.

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TO

GENERAL GILBERT,

WHOSE PROWESS IN THE
SPORTING WORLD
HAS RANKED HIM AMONGST THE FOREMOST OF HIS
COMPEERS;
AND WHOSE INTEREST AND LIBERALITY IN ALL
CONNECTED WITH THE
TURF
IS GENERALLY APPRECIATED,
THIS WORK
IS WITH PERMISSION
DEDICATED
BY
THE AUTHOR.

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PREFACE.

In adding one more work to the very many already before the public on the Veterinary Science, a few brief remarks may be necessary.

Within the last few years many considerable improvements have been accomplished through the admirable and persevering skill of Messrs. Bracey, Clark, Percival, and Blaine, who, in co-operation with other numerous Professors of the Royal Veterinary College, London, have brought the art to an unprecedented and almost unhoped for celebrity. It is the object of the author in this work to circulate all these advantages as widely as possible; to urge their utility, and to display in their truest colours the absurd and oftentimes barbarous practices, even at this advanced period of the science, still prevalent in many parts of the country.

The book is consequently such as will come within the reach of the poorer as well as of the richer portion of the community, and will, I trust, be found sufficiently easy and explanatory. Many new recipes are inserted, and the Diseases of the Horse are treated at some length.

Recurrence has occasionally been made to some of our old authors, as well as to the French system of Farriery, which remarks I trust will be found duly appropriate and interesting.

In that portion of the work relating to Neat Cattle, &c., every thing of recent introduction tending to their health and comfort has been carefully noticed, and according to their various merits recommended.

The Dog, that faithful companion of man, has not been forgotten, and I trust many useful hints may be gathered from the treatise.

In conclusion, my most grateful thanks are due to General Gilbert for the kind interest he has displayed in promptly acceding to my request of Dedicating the work to a gentleman so highly esteemed and known in the Sporting world.

Nor can I forget to mention the obligation I am under to Mr. Raddall, for his kind perusal and subsequent suggestions respecting the work while going through the press.

W. H. ROSSER.

Plymouth, October, 1842.

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THE IMPROVED

ART OF FARRIERY

AND COMPLETE

FARMER'S GUIDE.

A BRIEF SURVEY OF THE RISE AND PROGRESS OF THE VETERINARY ART.

THE veterinary art appears to be of considerable antiquity. Among the Greeks, the philosophic Xenophon did not esteem the subject unworthy of his attention. His work *(De re Equestri)*, proves that the study of the horse was held to be of considerable importance by many great men even in those days. When the glory of Greece had declined, and imperial Rome had snatched the laurel of victory from her brow, we find the subject became more general; and among the many authors treating on it figure the names of Varro and Virgil, who flourished in the age of Augustus, the golden period of Roman literature. A treatise by Columella, (entitled *De re Rustică*), is particularly devoted to the subject: he wrote in the time of Claudius.

Nothing, however, of importance on the subject appeared till Vegetius, in the latter part of the third century, embodied in his writings all that could be culled from both Greek and Roman authors; and so ably had he treated on this head that for ages it was re-

garded as the standard of the veterinary science. Its professors at this period were designated *Veterinarii*, a term derived from *veterinus*, a horse, so called by Pliny, probably from the steady and quiet disposition manifested by that noble animal when trained for the service of man: and although the *veterinary* art in the present day is looked upon as synonymous with *farriery*, still this latter term, from *ferrarius*, (*ferrum*, iron), with stricter propriety would apply to that useful and important branch of the art, namely—*the shoeing of horses*

As farriers, or those who made it their business to shoe horses, were, in the long reign of barbarism which followed the incursions of the Goths and Vandals into Europe, the only persons who practised as horse-doctors, the distinction between *veterinary* and *farriery* became extinct, and they are now looked upon as one and the same thing: nor is this to be wondered at when we reflect that books of every description were in that age of darkness shut up in the libraries of the convents, and learning confined to the priesthood and some few of the nobles. Consequently, as the practice of shoeing horses with iron was then first commenced, the men so employed, called farriers, were likewise resorted to as the sole persons who troubled themselves to procure what little knowledge existed of the veterinary science.

When a brighter day began to dawn, and learning dissipated the gloom of ignorance, in the sixteenth century, this science found a patron in Francis the First of France. Germany, France, and Italy, vied with each other in producing works on the subject. The writings of Camper and Cæsar Fiarchi were of considerable note. Blundeville, Mascal, Markham, and others, in England, now likewise began to apply

themselves to its study: Dr. Bracken deserves particular mention, as does Osmer, who wrote several able treatises, and thus contributed materially to the improvement and success of the art.

But the greatest impetus towards excellence was given by the establishment of a Veterinary College at Lyons, in 1761, under the auspicious patronage of royalty. The example of France was followed by most of the other states of Europe; and at this present time we find colleges for the advancement of the science in almost every capital.

M. Vial de St. Bel was the first who proposed the erection of such an institution in England, but not meeting with the success he anticipated he returned to France. In 1790 he again made the attempt, and receiving considerable support from the Agricultural Society of Odiham, in Hampshire, he was enabled to open the institution in the same year: of this he was appointed the first Professor.

Many writers of celebrity now appeared. Blaine, who was assistant professor with M. St. Bel, Lawrence, White, and others, came into the field, and considerable improvement in the science was making daily. Broadman published his "Veterinary Dictionary:" and in 1823 Mr. Percivall sent forth his invaluable work—"A Series of Elementary Lectures on the Veterinary Art." Add to these a host of names appeared whose writings have illumined the horizon of the Veterinary Art, which is fast advancing to meridian splendour.

It may not be irrelevant to the subject to make the reader acquainted with a few of the Rules of the College.

Those who intend to become pupils, are required to pay a fee of twenty guineas. A general examination

takes place every quarter of a year, but no specified time is stipulated for a student's becoming acquainted with the art, which depends upon his own ability and perseverance. Two guineas per annum is the fee for subscribers, or twenty guineas constitutes a member for life. This entitles the subscriber to send any number of horses, provided they be lame or sick, to the veterinary stables of the establishment, where they remain till cured, the proprietor paying only for the keep and shoeing; medicine and attendance being included in the subscription. Non-subscribers may send their horses for the inspection of the college surgeons, but they must not be admitted to the stables.

In addition to the works I have already named, the veterinary student, and indeed all who admire or take any pride or interest in that noble animal the horse, will find much good information in that very excellent "Treatise on the Horse," published under the auspices of the Society for the Diffusion of Useful Knowledge; and a monthly publication entitled "The Veterinarian," will give an insight into all the writings and improvements which are daily making in the art.

GENERAL HISTORY OF THE HORSE.

In Zoology the horse belongs to that family or class called *Equus*, which consist of many varieties, as the *Equus Assinus*, (the ass), *Equus Zebras*, (the zebra), *Equus Hernionus*, (the dziggtai), *Equus Montanus*, (the dauw), and the *Equus Quagga*, (qagga). At the head of these stands the *Equus Caballus*, or Common Horse. Although there are many varieties of

hoofed animals, these are separated from the others by having the quadrupedal phalanges united and surrounded with a hoof, which does not admit of its grasping any thing: hence these animals of the tribe *ungulata*, or hoofed, having but one toe, belong to the family *solipeda*, or single-footed.

Man could not have achieved a more useful conquest than the subjugation of this animal; and in whatever light we view the horse, from its boldness, its surprising strength, its exceeding beauty, its amazing speed, or its general docility, all unite pre-eminently in placing this noble beast at the head of our domesticated animals.

The original country of the horse cannot now be ascertained, although many naturalists think that he is indigenous to most countries, for he is to be found in every temperature, under the burning zone as well as the more northern climates, and varying in size and utility.

The precise time when this animal was first domesticated is lost in the remoteness of antiquity. The Sacred Writings inform us that when Jacob went into Egypt to procure corn, he sent up oxen, camels, and asses. Chariots and horses, however, appear to have been used by Pharoah when that prince lost his army in the Red Sea. Greece, doubtless, amongst other things, learnt the art of subduing these animals from the Egyptians; and history informs us that horse and chariot races were highly esteemed at their games, and Homer mentions them as early as the Trojan war.

Notwithstanding the circumstance of wild horses being found in countless droves in the great plains of Tartary, it does not appear that the Arabians knew the use of this animal till comparatively a late period. Solomon, in his traffic with foreign nations, would

surely have obtained Arabian horses if in his day they were as highly esteemed as now; but we are told Egypt furnished him. Mahomet, at the commencement of his career, did not possess any cavalry. Indeed we are very creditably informed that when presents were made to the Arabian princes, even as late as the fourth century, horses were considered the most acceptable offering, from which circumstance we may conclude, that, however superior the present breed of horses in that country may be, the climate, added to their own arts and industry, has brought these animals to that esteem in which they are at present held.

The Romans in their conquests extended the general use of the horse, and appear to have applied themselves greatly to its culture; although they did not find that the horse was unknown in the northern and western regions of Europe, as doubtless the animal, when once domesticated by the Greeks, became in great requisition in every part of the continent.

Many have been the conjectures as to what period may be fixed for the introduction of horses into Great Britain; and indeed it were a vain hope, at this distance of time, to endeavour to ascertain any thing that could with truth be relied on, since our earliest authentic history introduces to our notice the use of war horses and chariots as already known, and at a period when our islanders had but little intercourse with their continental neighbours. But this subject will be discussed at greater length in another chapter, together with the various breeds now in general esteem.

EXTERNAL CONSTRUCTION OF THE HORSE.

It will be our first intention to give some idea of the most approved shape and proportions of the horse, which may be divided into six several parts, namely—the Head—the Neck—the Shoulders—the Trunk—the Limbs—and Feet.

1. The Head is one of the first parts of the horse that will convey to judges the quality of the breed. Nothing of beauty can surpass the prominent outlines of the head of the high-mettled blood-horse, which is small, lean, and angular; the forehead broad; the ears small and pointed; the eyes full and prominent; the lips deep, firm, and by no means hanging loose; the nostrils open and wide; and the mouth not too small.

2. The Neck ought to rise from the chest with a moderate curve, and be neither too long nor too short. Horses with a short thick neck will generally perform any work requiring great strength, but they are seldom noted for speed. From the top of the neck rises the *mane*, which nature appears to have superadded as an ornament and beauty to this noble animal.

3. The Shoulders should run in an oblique direction forward from the withers towards the shoulder points, and should be muscular, but not heavy, as they are particularly essential to the movements of the horse. Between the points of the shoulders lies the chest, which should be moderately expansive and prominent, in order to allow the lungs to have a free action.

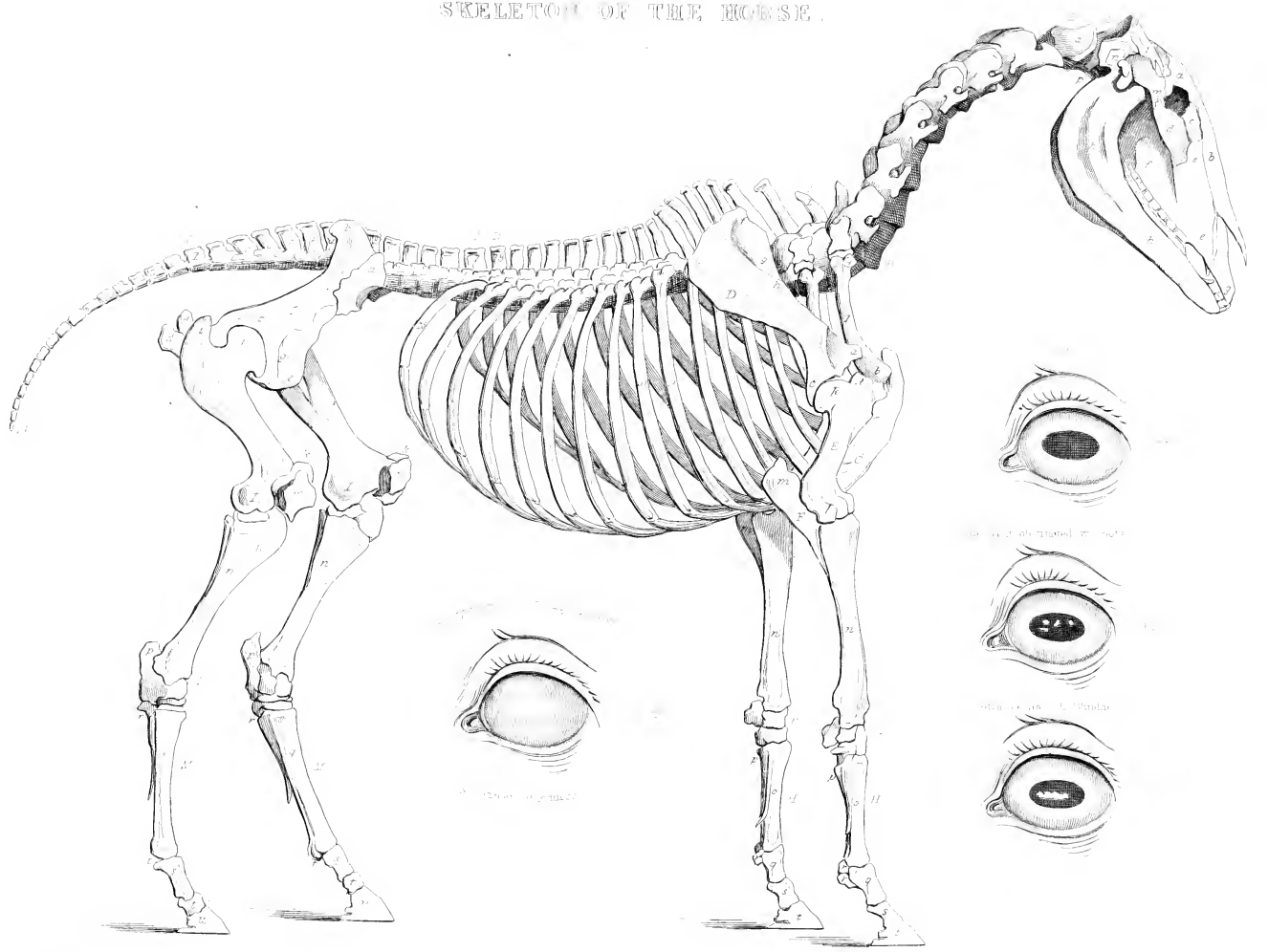
4. The Trunk from the ribs nearest the chest should be wide towards the back, and gradually deepened, in order to give the form which is termed deep in the

girths, and as the ribs decrease in size they ought to become more circular, which gives the belly a round appearance, and is more esteemed, not only for the beauty, but because it is accounted more healthy: the loins cannot be too broad and full, especially when strength is required; they should be a little rounded and long: the tail should form a graceful curve with the loins.

5. The fore legs are straight, gradually approaching each other as they descend to the feet; the arm should be muscular and large, when small it generally denotes want of strength: the knee large and flat, and the shank muscular and firm, and by no means fleshy. The thighs of the horse should be exceedingly strong and muscular, and no part will discover the breeding of the animal easier: the stifle should be of considerable length, as that denotes speed: the hock is the most material joint of the animal, and should be broad and wide, it is subject to many diseases, and ought to be well looked to.

6. The Feet also require attention, and are more frequently found too small than too large; they should not be too upright, which tends to open the heel, and thus the feet become faulty and diseased: the horn should be of a considerable size, otherwise the foot is easily hurt, and rendered unhealthy. By reference to the *Plate* No. 2, which is a skeleton of the horse, the reader may become acquainted with the bony structure of this noble animal, which is very essential in most cases connected with the treatment of wounds, lameness, &c.

SKELETON OF THE HORSE.



ON THE TEETH. AND HENCE THE AGE.

The mouth of the horse, when he has the full complement, contains forty teeth. These are of three kinds, namely—incisors, or cutting teeth—canine, or tustles—and molar, or grinders; and are thus arranged by natural historians:—

$$\text{Incisors } \frac{6}{6} \quad \text{Canine } \frac{1\text{-}1}{1\text{-}1} \quad \text{Molar } \frac{6\text{-}6}{6\text{-}6}$$

In front of each jaw stand the incisors, twelve in number, behind which lie the four canine teeth, one above and one below, on each side of the jaws: at some distance beyond these will be found the twenty-four molars, and these are flat at the crown, and are covered with ridges of enamel which penetrates the substance of the tooth.

When five or six days old, the four front teeth begin to shoot; and between the sixth and ninth months the last of the incisors make their appearance, and the *colt's mouth* is completed. The yearling, by the completion of the first year, has four molars and grinders above and below; at two years another will be added; and by the time the colt is three years old the last of these teeth ought to be protruding; and between the age of three and a half and four years the tusks usually appear, which do not arrive at their full growth till about the sixth year.

The horse, however, has two sets of nippers and grinders; those which come first are called the *temporary*, which presently make way for the permanent set.

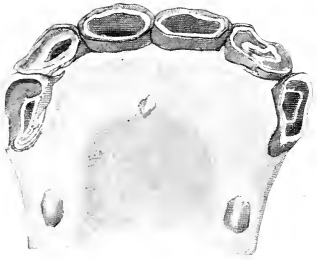
The permanent nippers make their appearance as follows, and are generally divided into three kinds:—

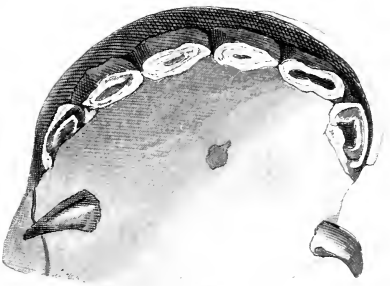
the *front*, which grow between the age of two and a half and three years; between three and a half and four years the next pair of nippers called the *middle* or *dividers* will be changed; and the last important change in the mouth takes place between four and a half and five, when the *corner* nippers are shed to make way for the new ones, when the *colt* changes its name for that of *horse*, and the *filly* becomes a *mare*.

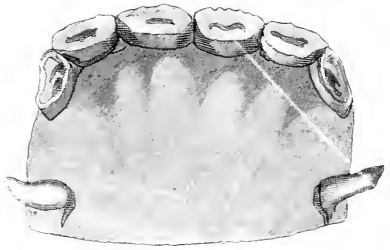
By this time, too, the permanent molars or grinders have likewise been completed. As the horse advances in age the cavities of the nippers gradually begin to wear away: at six the mark of the *front*, and by eight years the mark or cavity of the *corner* nippers, has disappeared; the horse then is termed *aged*, and it requires a vast experience to become a proficient in telling the age after this period. Dealers have at this crisis been known to practise a species of decep ion called *bishoping*, in order to procure a better sale for their animals, but this fraud a careful eye will easily detect. With an engraver's tool a hole is filed in the corner nippers, and then a hot iron is inserted, which leaves a dark mark and cavity, but of a blacker nature, and more strongly impressed, than in the natural tooth. Some pull the foal teeth out, but this may be easily detected by rubbing the finger along the gum where the tusks grow, which may generally be felt before the corner teeth appear.

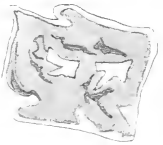
M. Girard thus states his opinion after this:—

"At eight years old there is usually complete obliteration of the mark in the lower jaw, the nippers, the dividers, and the corner teeth; the central enamel is triangular and nearer the posterior than the anterior edge of the tooth; the termination of the cavity next the root appears near the anterior edge in the form of a yellowish band, longish from one side to the









other. At nine years old the nippers become rounded, the dividers oval, and the corner teeth have become narrow; the central diminishes, and approaches the posterior edge. At ten years old the dividers are become rounded; the central enamel is very near the posterior edge and rounded. At eleven years old the dividers have become rounded; the central enamel is hardly any longer apparent in the teeth of the lower jaw. At twelve years old the corner teeth are rounded; the central enamel has completely disappeared; the yellowish band is of more extent, and occupies the centre of the wearing surface; the central enamel remains in the teeth of the upper jaw. At thirteen years old all the lower incisor teeth are rounded; the sides of the nippers are becoming longish; the central enamel remains in the teeth of the upper jaw, but it is round and approaching to the posterior edge. At fourteen years old, the lower nippers have an appearance of becoming triangular; the dividers are becoming long at the sides; the central enamel of the upper teeth diminishes, but still remains. At fifteen years old the nippers are triangular, the dividers beginning to become so; the central enamel of the teeth of the upper jaw has not disappeared as yet. At sixteen years of age the dividers are triangular, the corner teeth beginning to become so; the central enamel of the teeth of the upper jaw will, in many instances, be found to have disappeared. At seventeen years of age, all the teeth of the lower jaw have become completely triangular; but, as we have before seen, the sides of the triangles are all of a length. At eighteen years of age the lateral portions of the triangle lengthen in succession, first the nippers, then the dividers, and afterwards the corner teeth: so that, at nineteen years of age, the lower nippers are flatted from one side to

the other. At twenty years of age the dividers are of the same shape. Finally, at twenty-one years of age this shape appears in the corner teeth also."

Although some foals have been dropped in December, the usual period is the month of May, from which its age may be generally dated. Many horses have been known to live to a great age; but the usual practice of making the animal work when too young, and by that means prematurely exhausting its strength, considerably shortens its days. Mr. Percival tells us of a horse which lived to see sixty-two years. In 1758 a horse died which received a ball in its neck at the battle of Preston in 1715, and was not extracted till after death. And Blaine mentions a gentleman at Dulwich who recorded having three horses which lived to the respective ages of thirty-five, thirty-seven, and thirty-nine years.

FEEDING AND WATERING.

As the food of horses is well known to act considerably towards maintaining the health in some cases, and in others tending to produce ill-condition and sickness in the animal, it necessarily becomes imperative to say something on so important a subject.

Food may consist of two kinds, namely, *natural*, or such as animals are found to subsist on in a state of unrestrained freedom, and *artificial*, or such as man has found most essential to produce health, strength, and condition, when domesticated and rendered subservient to his use. The subject will be better dis-

cussed under the three different heads of *Herbage*, *Grain*, and *Roots*.

1. Herbage forms the principal part of the food given to horses, and is either green or dry. The green herbage consists of grass, clover, rye, tares or vetches, lucern, sainfoin, and melilot; the first of these is most generally converted into dry herbage or hay, the others are more generally given (since they are found more useful in such a state) when green. Of grasses there are several different sorts, and these are well treated of and arranged by Sinclair, and merit the attention of any who are interested in agriculture and the farm. *Clover* is not esteemed so good as tares in what is termed "*soiling a horse*," and yet may be very properly used sometimes, especially with a sick horse, which has been known to eat this in preference to any thing else. *Rye*, or *rye-grass*, though looked upon as not so nutritive as tares, is often preferred to clover, but it has been found to purge occasionally, and therefore not always good for the horse. Tares are invaluable in some cases, for they are both medicinal and nutritive in their nature. Many have entertained a stupid idea that they are apt to debilitate the system, and to make the hair have a staring appearance: on the contrary, they will be found very efficacious when judiciously applied in cases of surfeit-lumps, when the legs have begun to swell or the heels to crack, which is not unusual in the summer. *Lucern* and *sainfoin* may however be preferred to any of the former; where *hidebind* is prevalent they have been very speedy in their effects, and have soon brought a poor horse into good condition: this may arise from their being so very easy of digestion, their nutritious qualities are consequently more readily diffused throughout the system. *Hay* is made from the green herbage, which

when cut in the proper season is left exposed to the sun and air, and after a due time gathered together into what is termed ricks. The greatest care is requisite during the whole process, for the most judicious persons have frequently been unfortunate enough to have their ricks *mowburnt* (as it is generally called); in such cases the nutritious qualities are greatly inferior to good and sweet hay, and in many cases have produced disease. When hay of an inferior quality is given to horses, it will do good to sprinkle a little water in which salt has been dissolved on it; this gives the animal a relish for the food, which he might be inclined otherwise to refuse, and likewise renders it innoxious. Old hay, which has been carefully stacked, and in which the fermentative process has been of long duration, may be looked upon as more nutritious than new hay. Many opinions are held respecting hay generally. Blaine says, "Horsemen are not agreed on the subject of the properties of hay as a food for horses, some holding it very cheap, others lauding it to the skies. If these animals can be supported by it, of which there is ample proof, it must have sufficient nutritious properties: but will it do so under great and accelerated exertion? The answer is—No. Hay, to support life even, must be taken in great quantities, much time must be allowed to digest it, and much water to furnish gastric maceration for it in the stomach. All these circumstances are directly against those uses of the horse to which luxury and the wants of commerce have applied him, particularly the lighter varieties. Among these, therefore, hay is more used as a condiment, or as we use our vegetables, to increase the bulk of aliments to a healthy distention of the stomach; and as such, very little of it is actually necessary where horses are put to extreme exertion, for

their artificial life appears best maintained by condensed nutriment, as grain. In some posting and fast-coach stables hardly any hay is allowed, as uselessly distending the stomach. These are the extreme cases: but the inference to be drawn is, that the uses to which we apply the horse will best dictate the quantities of either provender; bearing it in mind, that horses, like ourselves, vary constitutionally, some being more readily and more simply nourished than others."

Add to these several kinds of grasses I have already named: in various portions of the world different other green and dry herbage is used, according to the peculiar products of the country. Thus, on the continent vine and lime leaves are occasionally used: furze and other things are used in sterile parts where grass is not abundant.

2. *Grain* of different kinds is given to horses, as oats, barley, wheat, and each of these differ in the quantity of nutriment they furnish. *Oats* have the most extensive use in this country; these when kept for some time will be much more wholesome than when new. The old oats being sweet and dry, are consequently more easily digested than the new, which contain much watery matter. When oats have been damaged they ought to be kiln-dried before they are given to the horse, to destroy the musty smell they usually acquire, and to kill the fungus which grows on the seed; they may, however, be burnt when undergoing this process, and are as noxious as when musty. *Kiln-burnt oats* being of a heating nature, cause mange, and other affections of the skin; while the *musty oats* will produce inflammation of the bowels and kidney, and derange the system generally; these likewise affect the urinary organs, which may also be occasioned by kiln-burnt oats.

Barley is more generally used on the Continent than in England, but it has been found to tend to inflammation, mange, &c., more readily than oats. It is accounted more nutritive, and when employed under the form of malt has been serviceable to horses recovering from sickness. In conjunction with straw, it is mostly employed by our neighbours in Europe as we use oats and hay. Wheat is a grain less given to horses than any other, as it is found much less digestible than the two former; it produces costiveness from its nature, which is very glutinous: when made into flour it has been effective in cases of over purgation.

Though strictly speaking *beans* and *peas* could not be considered as grains, yet it may not be amiss to mention them here. *Beans*, especially in farms, form an essential part of the horse's diet. They are better crushed, particularly when given to aged horses, as then they can more easily masticate them, and so turn their nutritive matter to account. Few things add so materially to the vigour of the horse; and as Mr. Youatt says, "There is no traveller who is not aware of the difference in the spirit and continuance of his horse if he allows or denies him beans on his journey." The best method to give them is with oats, as alone they are apt to beget costiveness. *Peas* are not used when the horse is in active employ, although very nutritive: the principal danger to be apprehended where they are given must be occasioned from the aptitude of the animal swallowing them uncrushed, as then they swell and enlarge the stomach, and are very injurious.

3. *Roots:* the most general in use are—1. *Carrots*, on which too much cannot be said in their favour. When the horse is in health they contribute to strength, and make the condition good, and the coat look well.

from their highly nutritious nature. The sick horse rapidly regains his pristine health and activity through the help of this useful vegetable. Add to these qualities the animal is very partial to and will work well on them. 2. *Parsnips* may be used to the same effect, as they have been proved equally nutritious. 3. *Swedish Turnips* are likewise very excellent; and though they do not contain the same quantity of nutriment as the two vegetables I have just named, are much easier of digestion, and merit more value than is generally put on them by the horse dealer. 4. *Potatoes* have been successfully given to the horse, but the benefit derived has been more beneficial when boiled, and in some cases the animal has preferred them to oats. If the potatoes are cheap you could not do better than feed with them, as the good condition, activity, and powers of a horse, will soon convince those who employ this diet. The quantity of water given should generally be lessened in these cases.

In addition to the different diets here named, many employ other things, but this chiefly depends upon the locality of places, and the possibility of procuring such food as is generally esteemed most wholesome for the horse. Moreover, different countries find different provender more suitable to the condition and health of their animals, as according to the situation, vegetables, herbage, grain, &c., all vary in their respective qualities.

To those wishing to be informed more particularly on the respective merits of a horse's diet, I would recommend a perusal of "The Horse," a work published under the superintendence of the Society for the Diffusion of Useful Knowledge. The whole subject is treated in a masterly manner, and the author deserved the greatest credit as having first put into the hands

of the many a book at once cheap and voluminous. After discussing the subject of food proper for a horse, he adds—

" It may not be uninteresting to conclude this catalogue of the different articles of horses' food with a list of the quantities of nutritive matter contained in each of them; for although these quantities cannot be considered as expressing the actual value of each, because other circumstances besides the simple quantity of nutriment seem to influence their effect in supporting the strength and condition of the horse, yet many a useful hint may be derived when the farmer looks over the produce of his soil, and inquires what other grasses or vegetables might suit his soil. The list is taken partly from Sir Humphry Davy's Agricultural Chemistry:—1000 parts of wheat contains 955 parts of nutritive matter; barley, 920; oats, 742; peas, 574; beans, 570; potatoes, 230; red beet, 148; parsnips, 99; carrots, 98. Of the grasses, 1000 parts of the meadow cat's-tail contain at the time of seeding 98 parts of nutritive matter; narrow-leaved meadow grass in seed, and sweet-scented soft grass in flower, 95; narrow-leaved and flat-stalked meadow grass in flower, fertile meadow grass in seed, and tall fescue in flower, 93; fertile meadow grass, meadow fescue, reed-like fescue, and creeping soft grass in flower, 78; sweet-scented soft grass in flower, and the aftermath, 77; fiorin, cut in winter, 76; tall fescue, in the aftermath and meadow soft grass in flower, 74; cabbage, 73; crested dog's-tail and brome flowering, 71; yellow oat in flower, 66; Swedish turnips, 64; narrow-leaved meadow grass, creeping beet, round-headed cocksfoot, and spiked fescue, 59; roughish and fertile meadow grass, flowering, 56; fiorin, in summer, 54; common turnips, 42; sainfoin, and broad-leaved and

long-rooted clover, 39; white clover, 52; and lucern, 23."

Watering.

Although few pay attention to this department of the horse's stable-management, yet a little consideration will prove of how much importance it is that the horse should be supplied with such water as is most palatable to him; and that some water is more beneficial than that obtained elsewhere, may be learnt from the fact that many jockeys and trainers will prefer carrying the water their horses have been accustomed to from course to course, rather than risk the chance of rendering their animals unfit for the race by giving them that which could be more readily procured in the neighbourhood. Besides, horses have a particular aversion to what is usually denominated *hard* water, and have been known to turn away from such as has appeared clear and good to the eye, and drank from a pool or ditch where the water has been rather turbid than otherwise. This last is usually *soft* water, while that of wells and pumps is *hard*, and, moreover, has a coldness not at all congenial to the horse's palate and stomach: indeed the intense coolness of well water, in the summer months especially, has been known to gripe and sometimes injure the animal in other ways. When in health, water should be administered at least three times a day to horses; the neglect of this in the hot weather has caused death; from the quantity they drink when hot and tired, the eagerness with which they will go to the water in such cases, and the difficulty to get them from it, clearly shows that they stood in need of this necessary article some time before.

When a horse has any distance to go, it is an ab-

surd idea that he should be restrained from taking water; it is equally injudicious to give too much as to abstain from giving altogether. If he be allowed to drink freely, he should not be gallopped hard for some time, as in such cases his wind might be affected incurably; but when none is allowed, loss of appetite will ensue, nor will he exhibit the same spirit and bearing. It is also a bad practice to give water before feeding; although after hard work, or on a journey, as the probability is that the animal will be thirsty, two or three quarts may be allowed beforehand, and some more may be offered afterwards.

At all times regularity in feeding is necessary, as disease will often accrue from suffering the horse to go too long without his small stomach (which soon becomes empty), being filled. Staggers often arise from this irregularity, which causes the animal to distend his stomach beyond ordinary, from the avidity and voracity with which he eats his food not allowing time to chew it.

EXERCISE.

This is one of the most essential points to be considered in the stable-management of horses, as, like food, it tends considerably towards the health and strength of the animal. In the former case they usually have daily employment, such as will maintain their health without distressing or injuring them. Not so the gentleman's horse, the racer and hunter; therefore it must be for these that this article treats. That daily exercise is necessary to all horses, is sufficiently

evinced from the aptitude of their being afflicted with grease, fever, &c., and hence arise indigestion and costiveness; also when confined to the stable, where they are regularly fed, and must be subject at times to breathe foul air arising from the dung and urine even where the groom may be most attentive. Exercise, on the other hand, assists and promotes a free circulation of the blood, enlarges the sinews and muscles, creates an appetite, and improves the wind; thus invigorating the system entirely, and the horse is more capable of serving us both in point of utility and pleasure. Nothing could be expected of a horse which has not been habituated to a sufficient daily exercise. While such as have been well managed, fed, and *exercised*, are not only capable of undergoing occasionally great exertion and fatigue, but have likewise performed those wonders in the field for which the English race-horse and hunter are so famed.

ON THE DISEASES OF THE HORSE.

Disease is that state when a portion or the whole of the body becomes affected, and the functions are entirely altered or are performed with pain and difficulty: sometimes one particular organ or function may become diseased, at other times they may all be affected; sometimes only a part, at other times several parts. Hence diseases consist of *simple* and *complicated*. The *causes* of disease are three;—first, the *proximate* causes, or the morbid condition itself; secondly, the *remote* causes, which may be either *predisposing* or *occasional*. Next to *heat* and *cold*, the influence of *food* and *drink*,

as the incentives to disease, by their action on the nervous fibre, may be looked upon as very general: and not unfrequently many diseases become the predisposing and even the exciting causes of others. At all times the symptoms of lesion in the natural functions of the system should be carefully observed; indigestion, loss of appetite, improper state of the bowels, immoderate thirst or hunger, and every circumstance of this nature, ought to be accurately investigated, as forerunner of a diseased state. The symptoms of disease should occupy the particular attention of the practitioner, whence he will discover generally those varieties of the internal condition of the body, which will guide him surely and successfully in the application of remedies.

FEVERS.

Many are the arguments that this subject has caused and scarcely one author will agree with another on the fevers of horses, though volumes have been written, the general wish being to deteriorate the ability of the first essayists, and raise up new theories on their fall. However, generally they may be treated under two heads—Simple or pure, and Symptomatic or local fevers.

Simple Fever.—Horses are subject to this fever in the spring of some particular season, when it is frequently the forerunner of some epidemic catarrh. Blaine says—

"By whatever name it may be called, there are few

practitioners but must have met with cases wherein evident functional derangement exists, which has insidiously gained ground, the horse gradually losing his accustomed vivacity, becoming restless, with frequent shifting of his limbs, which are often preternaturally cold towards their extremities or otherwise. The complaint is seen to be (for it comes on both ways) ushered in by a shivering fit, which corrugates the skin, makes the hair stare, and during its continuance, produces great coldness in the legs, ears, and muzzle. The cold fit is succeeded by a hot one; and occasionally, but by no means constantly, the hot fit ends in a partial or universal sweat; and in many cases the horse is for some hours without very active symptoms of the disease, and now and then no return occurs.

Causes.—Fever may be produced in a plethoric horse by too much exertion; sudden changes from heat to cold, and the contrary, are the promoters of this disorder, as well as of most attacks inflammatory in their natures to which the horse is subject; irregular treatment of the animal, and sudden removal from dry to green food, and *vice versa*.

Symptoms.—General dullness, and the mouth becomes hot and dry; the pulse is irregular, and a great unwillingness to eat is shown; costiveness, and the urine highly coloured; together with an unequal distribution of warmth throughout the body generally, are the prognostics of this disease.

Treatment.—At the spring of the year the horse should be carefully watched, and if it degenerates into epidemic treat accordingly. At other times, if the animal be strong, and in tolerable condition, bleed ac-

cording to the violence of the attack. The bowels must then be relaxed, but carefully, active purgation too suddenly may tend to bring on inflammation of the lungs. Mr. White recommends the following laxative drink :—

Barbadoes aloes - -	3 drachms.
Prepared kali - - -	1½ drachms.
Castor oil - - -	4 to 6 ounces.
Mint water - - -	2 ounces.
Pure water - - -	half a pint.

The bowels may be opened by adding two drachms of aloes to a fever medicine, but the purgation must be discontinued as soon as it has produced the effect required.

Emetic tartar - -	2½ drachms.
Nitre - - -	1 ounce.
Camphor - -	3 or 4 drachms.

will be found efficacious as a fever powder. When the cold fit first comes on, the animal may be judiciously trotted about for ten minutes or a quarter of an hour, and when brought to the stable well rubbed down with the hand by several persons.

Symptomatic Fever, is by far the most frequent among horses, and is generally an increased arterial action, originating from some local cause. It is not usually sudden in its appearance, but takes some time to show itself. Some particular organ becomes deranged, and accompanied often with inflammation ; the neighbouring parts then participate in the derangement, and gradually the whole system partakes of the affection.

The *Treatment* ought to be somewhat similar to that in common fever, taking care to pay attention to the state of that organ whence the disease originated, as

in most cases when that part advances towards a healthy system, and inflammation has begun to subside, the general derangement will begin gradually to disappear. In fever of all descriptions the horse's diet ought to be light, such as scalded beans, &c., with occasionally a little hay. Drink should be administered only in small quantities at a time, and warmed. The animal should be warmly clothed, but the stable must be kept cool. The most approved situation for feeling the pulse, which is highly necessary in all diseases of diffused or general inflammation, is under the edge of the jaw-bone, where the facial artery passes on to the side of the face; in that place it rests solely on the bone covered by the skin only, hence its strength may be ascertained with a greater degree of exactness than elsewhere. While the disease continues cordial medicines of every description must be carefully avoided.

OBSERVATIONS ON FARCY AND GLANDERS.

Although numerous works from different authors and at different periods have been given to the world on these two diseases, it must be acknowledged that there exists even at this moment a strange deficiency of accurate knowledge regarding them; and, what is worse, great doubt is entertained as to the possibility of an antidote at once speedy and efficacious in its nature being found at present, but that all must be left to time and study to throw more light on these subjects.

Of all, however, who have written touching them,

Mr. Thomas Smith, M. Dupuy, and Mr. Vines, deserve the greatest credit, and a careful perusal of their works will convey all the information to be gathered up to the present time on these important heads. On the connexion between these diseases Mr. Vines says—

"Farcy and Glanders are indicated by affections of separate parts of the body, the former appearing in the skin, and the latter in the mucous membrane of the nose and air-passages; and the symptoms are found to follow various inflammatory diseases, and always to depend on the unhealthy state of the system, which are the effect of those diseases which farcy and glanders are found to follow, as well as from a variety of other causes.

"The most general way of accounting for this by the modern veterinarians has been, that Farcy and Glanders are one and the same disease, and that the same *poison* produces both, but that while circulating with the blood it attacks such parts of the body as are most susceptible of its action; when the membrane of the nostrils or lungs are affected, constituting Glanders—and when the skin and lympatic vessels, Farcy. It is against this notion of an imaginary poison that I so strongly protest, and fearlessly assert that the symptoms of Farcy and Glanders are the effects of well known external causes; and that when the system is brought into a debilitated and unhealthy state, those parts which are naturally the weakest and most predisposed are consequently rendered more susceptible to the exciting causes, and the parts to which they are most powerfully applied are those which soonest become diseased. As for instance, if a horse is in an unhealthy and predisposed state, and any exciting cause acts on the skin, Farcy will be the result; and

if, subsequently, to the membrane of the nostrils, a weak and unhealthy inflammation termed Glanders may follow; and so on the reverse, if the cause first act on the membrane of the nostrils, producing symptoms of disease, and ultimately on the skin, similar effects will be found to follow: as thus, if a healthy animal should happen to be exposed, or driven against wind or rain, a healthy inflammation and its consequences, as the disease termed a cold, (catarrh), will be the result; and if in an unhealthy state, or improperly treated, the disease will be very liable to end in Farcy or Glanders."

These diseases frequently are consecutives to common colds, inflammation of the lungs, dropsy, injuries of the muscles or skin, grease, strangles, &c., especially when the treatment has been injudicious and unskilful, as is frequently the case when young practitioners are deceived in the symptoms exhibited, to which the greatest attention is requisite, as in very many cases they are so similar. Other causes predispose to Farcy and Glanders, as unwholesome food, both green and dry, too hard work, sudden changes from heat to cold, exposure to the inclemencies of the weather, and very frequently from making the animal work before it has recovered from the general debility subsequent on diseases which have been very violent. It sometimes happens that the horse is afflicted with both Farcy and Glanders at the same time, occasionally the symptoms of Glanders appearing before those of Farcy, and *vice versa*. It may not be amiss to hear Mr. Vines on the general opinions entertained by different professors.—

"The great fault of those who have employed their talents as writers or lecturers in the veterinary profession, is, that they have been in the constant *habit*

of holding the subject of Glanders and Farcy up by the wrong end. It is true, they have, at times, slightly noticed the disorganisation of the natural parts of the body, such as the diseased state of the lungs, membrane of the nostrils, and cavities of the head, as well as of the skin. But, then, those gentlemen have been also accustomed to *consider these diseased appearances as the effect of a specific poison*, and not as dependent on, and caused by, a variety of predisposing and exciting causes, which, in the first instance, have the effect of producing organic disease in all its various forms, and of which that state of the system, commonly called Glanders and Farcy, is nothing more than the sequel or common follower."

In certain cases where these diseases have sometimes presented themselves in a less formidable aspect than usual, they have consequently been far less contagious than in other cases; hence arose a difference of opinion as to their contagious nature, which some authors doubted, more especially as regards Farcy, and among these are Mr. Smith, and M. Dupuy; and Mr. Vines asserts he "never knew of a case which could be fairly attributed to infection through any inhalation from another horse."

Glanders,

May properly be considered of two kinds:—

1st.—When the mucous membrane which lines the nostrils and the cavities of the head only is affected.

2nd.—When the lungs are likewise diseased, being covered with tubercles, &c.

Causes.—When the disease is confined to the head

and nostrils alone, it may have originated from common cold or strangles, which being improperly treated have produced an unhealthy and debilitated system, and the consequence has been Glanders in its most simple form. Those cases have frequently been cured without any medical treatment, by care and avoiding all exposure to the causes through which they first appeared. Glanders in its worst and most complicated form, that is, when the lungs are diseased as well as the nostrils and head, is consequent to strangles, inflammation of the lungs, colds in their various forms, and more especially does this disease result from those I have just named when the maladies have been maltreated, and the appearances are more or less unhealthy. In very many cases, if horses when affected with severe cold, or strangles, &c., were allowed to rest for some time instead of being forced to undergo the same exertion they are capable of performing when in perfect health, the owners would be considerable gainers in the end; for the consequence of such a course is, that the appetite at such times being very bad, and the system being disorganised, a general debility is produced; the pus from the mucous membrane of the nostrils, at first healthy, becomes unhealthy, and the system becomes much impaired; the final results are Farcy and Glanders.

Mr. T. Smith, in his "Treatise on Glanders," mentions six immediate causes as productive of this disease. —1. General debility;—2. The effects of previous disease;—3. Breathing an impure atmosphere;—4. Exposure to a current of cold air, or being allowed to drink cold water when warm;—5. Sudden transitions from cold to heat, and *vice versa*;—6. Infection. This gentleman, together with Mr. Vines, M. Dupuy, and some few others, agree in this, namely, That the final

result of previous disease through maltreatment is Glanders: while on the other hand, many practitioners will not admit it; while not a few give their opinion that "hereditary defect in the structural capacity of the aerating organs may be regarded as a remote cause."

Symptoms.—According as the system is more or less debilitated, so is the appearance which the disease assumes more or less unhealthy. The mucous membrane has a paler colour than ordinarily; although in the first stage ulcers may not show themselves, while at other times it becomes rapidly covered with them, and these vary in colour as the disease increases; when of a reddish or violet hue the symptoms are more healthy than those of a dirty yellow, which eventually changes to a dull leaden cast. When the ulceration of the membrane is great, particles of it begin to drop off, when blood is likewise discharged from the nostril, in quantities varying according to the state of the membrane. The pus, or matter discharged from the nostrils, is of a deeper hue than naturally, not unlike their glue or size, which dries and is found round the edges of the nose, sometimes appearing only in one, at other times affecting both nostrils. At first the ulcers are not much more than a spot just perceptible; these increase slowly or rapidly, according to the debility of the system, sometimes being spread over the membrane like small peas, and in other cases exhibiting one mass of ulceration, which gradually deepens till the internal surface of the frontal, maxillary and nasal bones become affected, and the cartilages are absorbed.

Blaine speaking of this disease, says:—

"Sometimes the ulceration exists so high up the nasal fossæ, that it is very difficult to discover; yet

with the head held up to a full light, more particularly towards the sun when shining, it may be detected if within any moderate distance; and when it cannot, the varied appearance of the discharge will bespeak it. The junior practitioner must not, however, allow portions of the secreted matter which may adhere to the surface to mislead him into a belief of existing ulceration; he should, when in doubt, pass up his finger, or a probe armed with tow, and wipe away such: and had not the error actually occurred in the practice of more than one veterinarian, I should be almost ashamed to insert a caution, that the opening of the nasal duct may not be taken for a chancre. The situation of this opening is found a little way up the nostril on the reflected skin, and not on the mucous secreting surface. At an uncertain period of this form of the disease, occurring sometimes much sooner than at others, the lungs become tubercular, and hectic symptoms follow the bursting or ulceration of them; large vomica also form and burst; and now the health is evidently fast impairing: there is cough, loss of appetite, emaciation, and weakness in the loins; the hair feels dry, and falls off on being handled; the matter from the nose increases in quantity, becomes sanious, stinking, or bloody, and is couched up by the mouth also; and in the expressive words of M. Dupuy, 'The animal has a bloated aspect; the cellular tissue pits, the conjunctiva is infiltrated, the caruncula lachrymalis discoloured, the eye has the expression of a sheep suffering from the rot, the gums are pallid, and the under eyelid of the affected side juts into a prominent circle of duplication. If put to hard work, such horses rapidly decline in condition; and yet, should they be destroyed, fat is found in abundance upon the belly and about the heart.' "

Treatment.—Various are the medicines that have been tried to effect a cure in this terrible disease. Nasal injections have been used, but alone have produced no effect, although in connexion with other things used externally and internally have occasionally been effective. Mercury, as well as muriate and carbonate of barytes, have as often killed the animal without producing any relief from the disease, especially where the latter medicines have been administered incautiously. Some have tried camphor, and others sulphate of copper, and these have been found efficacious when the disease has not advanced beyond its first stage. Mr. Coleman has used sheep's blood in some cases, and different recipes of arsenic, antimony, zinc, &c., but they have not produced the results anticipated. Mr. Vines, in his treatise on this disease, urges as remedies to be employed, both stimulants and tonics, which, administered carefully, greatly improves the condition and strengthens the system. In the first class he names—cantharides, canella bark, capsicum berries, ginger root, cubebs, grains of paradise, pellitory of Spain, *(pyrethri radise)*; all sorts of pepper, as the common black, Cayenne and Chili; allspice, *(pimentæ baccæ)*, sweet flag root, *(calami aromat. radix)*, and winter's bark. Among the last—augustura bark, buckbean, cascarilla bark, camomile flowers, gentian and quassia. Of all these he has found cantharides the most effective; given internally, this disease is greatly relieved by the effects of its action on the general system, such as promoting the circulation of the blood, producing a freer action in the several functions of the body, and a considerable increase of appetite, when the unhealthy discharge from the nostrils assumes a more natural hue and tends to a restoration of strength: and of all the medicines ever used for the

disease, he states that none was ever found to be so generally beneficial and rapid in producing permanent results for the better. Many eminent gentlemen in the profession now use cantharides with great success; but care must be taken that the animal is not overdosed, which will produce very different effects from those intended, and in some cases be fatal. At the same time regard must be paid to the age, size, strength, and condition, of the animal. Thus his first trial is with a dose of from four to six grains of cantharides, made into a ball with a recipe of

Ginger root - - -	1 drachm.
Gentian - - - -	2 drachms.
Carraway seed - - -	2 drachms.

And treacle or honey.

This is administered once a day for ten or fourteen days, when the portion of cantharides is increased to six or eight grains, and after the same lapse of time it is still further increased to ten or twelve grains, which is the greatest quantity required; but the several additions of cantharides in each dose must not be given unless the horse appears to be improving; on the contrary, if not, the medicine ought to be wholly discontinued for a few days. Blaine recommends sulphate of copper or zinc to be used with the cantharides, with or without the tonics, at the option of the practitioner.

Thus have I endeavoured to give the most approved methods of treating this terrible disease, together with the various opinions of the most eminent veterinarians of the present day, on which subject nothing in the art admits of so much controversy. The field, then, is still open; and should any skilful practitioner who pays attention to this disease discover what for ages has been wanted, a certain remedy, he will have de-

servedly won a laurel and the lasting gratitude of all the present and future generations who have any interest in the care and cultivation of the horse.

Farcy.

This has an intimate connexion with the former, being in fact but a modification of the same disease, and something has already been said to that import. Solleysel, after studying their affinity, says, "that when Farcy is past remedy it degenerates into Glanders, which, in that case, is absolutely incurable." It admits of many varieties, some number seven, others eight, different forms of this disease. Solleysel notices four:—

"*The Flying Farcin.*—This kind of Farcy is known by certain *knots* that are spread over the whole body, appearing sometimes in one place and sometimes in another, and resembling the little swellings called *corns* in men. 'Tis called the *Flying Farcin* because it quickly overruns those parts that seemed not to be infected with it before. 'Tis easily cured, because it has not a fixed seat or rest in the *emunctories*.

"*The Corded Farcin.*—The *second* sort of Farcin is accompanied with hard swellings, resembling the *ropes* or *strings* that run between the flesh and the skin along the veins, especially those of the *thighs*, *neck*, and *brisket*, and along the *belly*. These *cords* are beset with tumours or *knots*, which break forth into *ulcers*, and cast out matter; and the *colour* of these ulcers is different, according to the variety of the corrupted humours. If the *blood* predominate, they are *red*; if it degenerate in *choler*, by reason of the defect of the *liver* in separating the *bile* from the mass of humours,

they appear *yellow;* if phlegm abound, they are *white;* and if there be a redundancy of burnt, black, and *melancholic* humours, they are of a *blackish* colour, which is the most dangerous of all the four cases.

"*The Farcin resembling a Hen's Fundament.*—In this kind the *knots* are seated between the flesh and the skin, without any visible external swelling; they resemble *corns*, and fasten the flesh to the skin. If the cure be not timely begun, the disease enters into the body, and, infecting the inward parts, kills the horse. Sometimes the knots are fastened to the inside of the skin only, and are not rooted in the flesh; they appear usually on the fore part of the breast, and are very easily cured."

Causes.—Together with the usual causes of Glanders, probably it is only contagious when the matter is inserted into the *sores*, or a part cut open in another animal. A gentleman once tried the effect on an ass, by inserting the pus of a farcied horse into the mucous membrane; the consequence was in a week it became glandered. Cracks and grease, when it has lasted some time, will degenerate into Farcy. Any of the causes which produce ulcers on the extremities, may be converted into the same disease. As regards the symptoms, enough has been already said at the commencement of the subject to form a tolerable opinion on this head.

Treatment.—When accompanied with Glanders treat as directed under that head. But in Farcy there are likewise, from their contiguity, as many opinions as on Glanders. Although the cure has been attempted more successfully when the horse has been afflicted singly. Mercury has been tried; and what is still

better, corrosive sublimate, which should be given to as great an extent as possible, not allowing inflammation or salivation to take place; commence with a dozen grains, and gradually increase according as the animal appears to bear it: a bitter tonic may be compounded with these if necessary. Mr. Peal regards

Sulphate of mercury - - 1½ scruples,
Gum guaiacum - - - 1 drachm,

given once a day, as a good internal remedy. Washing with sea-water, and the same administered as a medicine, has been stated as effective in protracted cases. Where sea-water cannot be procured, the sores may be washed with a solution of common salt three or four times a day. Green food, and that which contains much moisture, is particularly recommended in all cases of Farcy; potatoes, turnips, and carrots, may be given when tares and grass are not procurable.

It has been noticed that at least a third of the horses used in the hackney-coaches of London, together with those in the carts of the poorer sort of people, are glandered; these being sold cheap, soon pay themselves by being worked hard, and last occasionally for three or four years. Horse-dealers frequently pass glandered horses on those who are not skilled on the subject by first riding them very hard, when the collected secretion is for the time checked, some astringent powerful in its nature is then inserted into the nostrils, which stops the discharge for many hours; but this may be detected by the uneasy manner of the horse.

STAGGERS.

is a disease bearing a proximity to apoplexy, and is

of two kinds, the *Stomach Staggers*, or that which chiefly arises from acute indigestion, and the *Mad Staggers*, which is a species of inflammation of the brain, or brain-fever; but the symptoms of the one are so similar to those of the other, that they can scarcely be distinguished, especially at the commencement of the disease.

The *Causes* to which they are attributable are—overfeeding—the practice of keeping a horse too long without his food, when, as soon as he gets it, he swallows it faster than he can digest it, more especially when it consists of pollard, bran, chaff, &c.—the brain occasionally sympathises with the stomach when in a state of distention through excessive gorging—allowing no water to moisten dry food—every thing that tends to terminate blood to the head, as excessive exercise, exposure to an oppressive mid-day summer sun. The draught-horse has been made subject to it from the long and frequent use of a tight collar. Suddenly changing the diet of horses which has been dry and poor to that which is rich and luxurious; lastly, any thing producing fever may be the means of bringing on the Mad Staggers.

Symptoms.—The mouth is hot and dry, and the eyes languid and drowsy; the head is dull, and hung listlessly down: these are generally the first symptoms of the disease. As it progresses, the pulse becomes irregular, the head is pressed against the wall with great force, the flanks begin to heave, and after rolling from side to side he will fall down, often sweating with the intensity of the pain he suffers.

Treatment.—Bleeding copiously in all cases of Stag-

gers, especially in the mad symptoms, is highly necessary; the next thing is to unload the stomach and intestines by an active purge, and give that which acts quickest, as in many cases if relief be not speedy a fatal termination of the disease may ensue; the clyster should be used also, as a more speedy way of clearing away the hard dung balls consequent on the excessive costiveness with which this disease is invariably attended.

Barbadoes aloes - - - 1 ounce,
Calomel - - - - 2 drachms,

may be given either in a ball or drink; if this does not act, a quarter of an ounce of the aloes may be judiciously repeated every three or four hours, till purging commences. Blisters made of cantharides may be applied to the head when the disease is more especially seated in that part; and after the purgation has been effected, such medicines as foxglove, tartar emetic, &c., may be given two or three times through the day; these will decrease the force of a too rapid circulation of the blood and its termination to the head. The croton nut is given in a drink as an active purge in somc cases, the first dose being half a drachm, which may be repeated occasionally to the amount of eight or ten grains. It is a good practice to keep the horse without his food for some time after an attack, and then commence with bran-mashes. Prevention is better than a cure—and certainly this disease is generally produced through inattention and carelessness. Farmers, and those who work their horses daily, ought never to suffer them to go more than five or six hours without being fed; and nothing sooner produces disease than the habitual practice of allowing their animals to fast during the whole of a day's work, and thus not only injuring them, but subjecting them-

selves to a great loss; whereas, the proper use of the nose-bag, and well regulated hours of feeding, tend alike to their health, comfort, and utility.

When the delirium and frantic symptoms of Mad Staggers are very violent, and the horse exhibits signs to do mischief, and knocks his head against his stall, it is the better practice to sling him, which not only prevents him doing injury to himself, but gives the practitioner a better chance of approaching with safety to operate on him.

Some have supposed that the atmosphere, weakening the organs of digestion at times, has made this disease epidemical. Gibson, who appears to have been the best writer and practitioner of his day, held the following opinion, which is worthy of attention. He thus states the circumstance:—

"Several young horses were seized with the staggers, attended with such uncommon symptoms as put the ordinary practitioners quite to a stand. It was sufficiently visible that the disorder lay principally in their heads, by which most of them, more or less, lost the use of their limbs: some were only cramped and convulsed in a moderate degree, and were soon relieved by bleeding and cephalic medicines, with proper embrocations; in others, this new distemper appeared to have a near affinity to a hemiplegia, or that sort of palsy which in men takes away the use of one side, but not to such a degree as happens in the human body. I had a horse so bad, that when he came to be moved, he was held up on the side affected by several men, who were forced to support his whole weight. When he was let loose in the riding-house, he turned round like a person in a vertigo and fell down suddenly; but this rotation did not proceed altogether from the causes which usually produce the vertigo in men, but from

his wanting the use of his limbs on the off-side, which made him turn round on his near-side; the limbs of his near-side not being affected, but firm, which was the reason of this circular motion, for he could not get straight forwards for want of the use in the other. Several horses were taken in the same manner, but in a less degree, and some were convulsed, and had their mouths sometimes pulled to one side, but were soon relieved, but those that were only convulsed in this manner, retained somewhat their appetite.

" Another remarkable case happened at this time, of a horse that was so much convulsed, that whenever he endeavoured to raise his head in the least degree, nothing could be seen of his eyes but the white part, which gave him a very extraordinary appearance. But as this horse also had a very strong fever, and was affected on both sides alike, so he never lost the use of his limbs, but went staggering, and with a twitched motion, arising from convulsed cramps.

" This horse was recovered by bleeding, and other plentiful evacuations, with the constant use of cephalics, which were given him in great plenty, especially castor, which had such an effect upon him, that it kept him perspiring above three weeks without intermission, insomuch that all his clothes and the whole stable were perfumed with it; and if these remedies were but one day omitted while the convulsions lasted, the horse always fell back, and was the worse for it, so that he must inevitably have died in the hands of the common practitioner, none of whom I ever knew treat convulsed horses in this manner.

" As to the horses that were affected on one side only, their lameness was more apparent, so that I caused them to be put into close stalls, and littered quite up to their bellies, and also had a good quantity

of straw piled up against the wall or partition next the lame side, that they might rest upon it, and not be exposed to the danger of falling down. One gentleman, who had a very fine horse seized with this distemper, ordered the whole side of the stall to be lined with a triple bass matting, and his litter was spread all across the stable, pretty deep, from the end of the standing, which method was followed by most others under my care, and affected in the same manner, that they might not hurt themselves in case they should move backwards and fall down, but lie easy until they were helped up, for scarce any of them were able to rise of themselves. But most of these horses leaned their lame side altogether against the stall, without moving their posture, till they had pretty well recovered the use of their limbs, which generally happened in ten or twelve days; others that were less affected recovered much sooner, so as to be able to stand without leaning.

"These had all of them fever when they were first seized, which is an usual attendant on convulsed disorders, but after bleeding, and other evacuations, their fevers abated, and they began to feed on scalded beans, and pick a little hay by the hand. They were bled plentifully, and had clysters and lenitive purges. They were at the same time treated with cephalics and stimulating embrocations outwardly."

This same writer's description of this disease in all its stages is masterly. After stating his opinion that stoppages in the stomach and intestines, full feeding, want of air, and sufficient exercise in hot and dry weather, and bad food, are chiefly the causes which occasions Staggers. He further adds—

"Other things have also the same effects, as soiling horses with any kind of green herbage, such as vetches

or clover, when it happens to be grown too old or tough, and has lost its succulency, especially when it has been cut too long before it is used. Any of these may cause stoppages in the first passages, and sometimes excite such disorders as by their continuance affect the head in a very strong manner. When the Staggers and convulsive symptoms arise from such causes, the horse generally looks dull about the head, with his eyes swollen; he reels and totters as he moves; his mouth is generally contracted, but not shut up; he breathes short upon the least motion, and for the most part has a short cough, and the motion of the flanks becomes irregular, though seldom violent. For the same reason he scarcely ever lies down till some relief is afforded him, because the extreme fullness of the abdomen causes great uneasiness whenever he offers to bend his body, insomuch, that many when they see a horse in this condition imagine he has received some hurt in his back or loins.

"Other signs are costiveness, for he is apt to strain much when he goes to dung, and makes many fruitless attempts; he stales but little, and that of a dark colour, which often proceeds from the obstruction which it meets with in its passage from the liver into the jejunum, and thence the jaundice sometimes attends this complaint. In order to effect a cure, let some person that has a small hand rake the horse thoroughly and bring out the dung from the rectum, which is generally hard, and made up of little small balls of a blackish colour, and quite dry. After this, let him have plenty of emollient oily clysters, made of mallows and such like, but in places where these cannot readily be got, they may be made of pot liquor, or water-gruel.

"To two quarts of this liquor may be added a pint of linseed oil and half a pound of treacle.

"This should be given milk-warm, and repeated every day, at least till his dung comes away with ease, and grows soft. His diet should be the best hay, scalded bran, or boiled barley, till he has been thoroughly emptied, and for some time afterwards. At first the dung that comes away in the clysters will be in small hard balls, and sometimes along with it a putrid slime, which when discharged gives great relief, but, by a continuance of the clysters, and the open diet, the dung soon alters, and comes away in such great loads that it appears wonderful how it could have passed through the fundament; but as soon as this happens it brings sure relief, and a passage is made for gentle purges, which, in this case, are always of great use. Take lenitive electuary, cream of tartar, of each 4 ounces, and 2 ounces of brown sugar, mix them in a pint and a half of ale, the ale to be made hot, that the cream of tartar may be the more easily dissolved in it; after that the sugar, and last of all the lenitive electuary.

"This being given in the morning upon an empty stomach, blood-warm, will probably begin to work before night; and it seldom makes a horse sick, as the stronger purges are apt to do when he is full and costive, so that he will drink warm water, or warm gruel, without reluctance. It may be repeated three or four times, allowing always two or three days respite between each draught, keeping in to an open diet, with proper exercise, till he recovers his usual vigour.

"By this method several horses have been cured that were much affected with convulsive systems, and the event plainly showed that this affection was owing to a stoppage of the alimentary functions. Of this the following was an instance:—A horse was sent from Hounslow Heath when the troops were encamped

there. He was so much convulsed that he could neither eat his hay or corn, and his neck so stiff that he could not reach to drink. The man that led him was forced to stop every hundred yards on account of the stiffness of his limbs and the shortness of his breath. When examined, however, he did not appear so much convulsed as those which have worms in the stomach or intestines, or imposthumations in the viscera. By working his mouth it might be opened a little, neither were his limbs so stiff, or so much contracted. It was evident he was very costive, for he often made motions to dung, but could not part with more than a few small hard balls, which showed the necessity of opening oily clysters.

He had two every day at first, which brought him to dung pretty freely, and soon recovered the use of his jaws so as to eat hay and scalded bran. After this he had opening drinks administered to him, and the dung he voided in a copious purgation was in vast loads, and must have lain a considerable time pent up within him, and when this load was once discharged he soon recovered, and without the help of any other means."

On an occasion when means were not taken speedy enough to obtain a cure in this disease, Gibson gives us the following account of a *post mortem* examination :—

" The stomach and the intestines, both large and small, were filled and crammed to such a degree that it would have been impossible, by any means whatever, to have procured the least vent. For all the aliment that was in the stomach, and the dung in the intestinal canal, from one end to the other, was entirely dry and without moisture, and before they were laid open appeared as hard and full crammed as a sausage, without

the least yielding or softness in any part. The matter contained in them was no less extraordinary, the stomach being filled with acorns, sloes, oak leaves, and such other things as he could pick up about the hedges, some green and some withered, for it was towards the latter end of the year when this occurred. The contents of the intestines were chiefly leaves, neither well chewed nor digested, with a mixture of grass, but there was little or no grass in his stomach, but chiefly acorn-cups and leaves, which was distended to its utmost extent, so as to keep the muscles at their full stretch, by which their action, which is necessary in digestion, was altogether at a stand.

"This horse, it seems, had been turned to grass in a very rank aftermath. Here he had become so surfeited that he came to loathe his grass, and his appetite being depraved, he had taken to those things which were bitter and sour to the taste, which generally aggravated his disorder by their restringent quality. The contents both of his stomach and intestines when rubbed between the hands, crumbled like dung dried in the sun, without possessing the least drop of moisture or any ill savour; for there was no room for air to be pent up in them, from whence arises that stench that occurs in opening the intestines of dead animals; and indeed it was somewhat extraordinary that he lived to come to this extremity, when the muscular action of the stomach, and the peristaltic motion of the intestines, by which the expulsion of the excrements is forwarded, must in all probability have been lost for several days.

"There seems to be no other reason for his holding out so long, but that he was in all respects extremely sound, and little else was to be seen but a beginning inflammation in some of the internal parts, which,

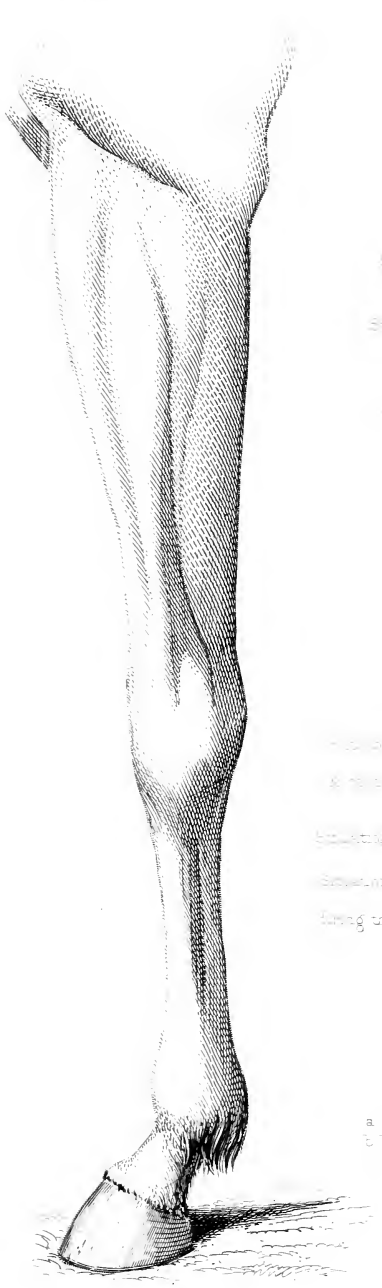
considering how unmercifully he was crammed, could not but be the case.

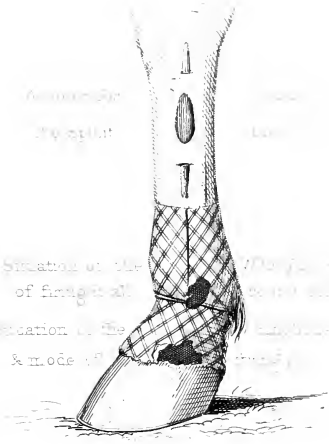
"Instances," continues this writer, "frequently occur among men of voracious appetites who have died suddenly after an excessive meal, by filling their stomachs to such a degree that the strongest emetics could have no effect upon them. But these instances in men are not very frequent, for if a man's stomach is not filled too suddenly to its fullest extent, (which has sometimes happened to those who have brutishly eaten for a wager), he will generally have a spontaneous inclination to vomit, and so get rid of his enemy. But an excessive fullness of the stomach and guts must always create great disorder in a horse that has no natural power to vomit, so that all possible means should be used to preserve the passage of the intestines free and open, according to the method before described, namely, by clysters, lenitive purges, and an opening diet, that being all the chance he can have for his life in such circumstances."

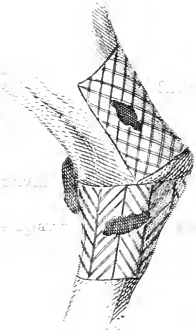
DISEASES OF THE LEG.

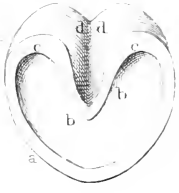
There are several diseases peculiar to the leg, especially among the bones and joints, and though they do not always produce lameness, the horses so afflicted are ever denominated unsound. These may rank as follows:—

Splents, or Splint.
Ringbone.
Spavin.
Anchylosis, or Stiff Joint.
Ossification of the Cartilages of the Foot.





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Splents, or Splint,

Is a disease frequently found among young horses, from being worked too young, but sometimes disappears without any treatment. The fore-legs are oftener subject to them than the hinder ones, from the circumstance of their supporting the whole weight of the body, and consequently being more exposed to concussion. It consists of a tumour, at first callous, and by degrees converts into a bone, and is not always found in the same part of the leg, but varying its position: in some instances it lies at the fore edge of the matacarpal; in others at the posterior edge, this situation being infinitely more hurtful than the former, by its pressure on the ligaments, and thus obstructing the free operation of the flexor tendons; sometimes it exists at the lower part of the cannon or shank, when its influence is more to be feared than when seated in the higher end. Splints are generally situated inside the leg, and most frequently accompanied with inflammation; and lameness is present or absent, according to its position, as when it presses on a tendon or ligament the inflammation must give pain, and when near the joint the action is awkward and lame, until custom has made it second nature.

Treatment. — There are many different systems adopted by farriers, and practitioners generally, to get rid of this evil, which not only takes from the beauty of the leg, but oftentimes constitutes unsoundness, and of course lessens the value of the horse. Setons, though frequently employed, leave a blemish, and is by no means so effective as the blister, as does also dividing the periosteum which covers the splint, and

by which the lameness is caused, through that membraneous skin being stretched beyond its usual size: both these modes are practised at the Royal Veterinary College. If, however, the splint be recently formed, after shaving the part affected, apply a little mercurial ointment night and morning, taking care to rub it well in; after this, a blister made of cantharides should be applied; and if these do not produce the effect desired, try a second and stronger one, and this may be probably attended with greater success. When lameness does not proceed from the splint, it were oftener a better practice to take no notice of it. Nothing could exceed the inhumanity of the old farriers, and indeed some of the present day, who cannot altogether rid themselves of some barbarous usages. The habit of boring the splint with a gimlet, bruising it with a hammer, applying to it the chisel and mallet, and thus cutting away the exostosis, are among their most cruel operations. But we must hope that all such errors are fast disappearing, and that a brighter day has risen, when, as Sir W. Blizzard expressed himself while presiding at the Veterinary College students' dinner, "*reputation and success must be founded on the union of science and humanity.*"

Ringbone

Is more frequently found in the hinder than in the fore feet, and consists of an inflammation and enlargement of the pastern bones, which form a ring round the coronet of the hoof, hence its name. The cartilages of the foot are sometimes affected with it. The reason it occurs in the hind feet, arises from the violent exertion some horses are compelled to make in

propelling themselves forward when they are attached to too great weights, thus the ligaments of the joints become injured, and not being looked to early an exostosis takes place.

Treatment.—Although horses afflicted with this disease are not always lame, nevertheless, it constitutes unsoundness. When lame, it is necessary to bleed in the foot, which decreases the inflammation; then apply a poultice made of bran and diluted vinegar; after which blister; and if this does not remove the lameness, as a last resource perform the operation of firing, which is all that can be done. For the animal has so much pressure on that part of the foot, that unless the cure is attempted in the early stages of the disease, it is generally irremediable; as are likewise *exostoses of the navicular and coffin-bones*, which often occur with the Ringbone, and sometimes alone, especially in old horses.

Spavin, or Bone-Spavin,

Is another disease which has been pronounced as constituting unsoundness. Much has been said and written on the subject, and more remains to be satisfactorily explained ere a just distinction will be made between many exostoses to which the hock of the horse is subject. In "The Veterinarian," that excellent writer on the horse, Mr. Youatt, makes the following remarks on this point:—

"Various diseases in the hock had been confounded under the name of *spavin;* but in his mind there was as much difference between the common spavin (the bony union between the metatarsals and the exostosis

frequently consequent on it), and ulceration of the synovial membrane of the cuneiform bones, as there was between the navicular joint disease and any other disorganisation of the internal structure of the foot. They might be connected, but were perfectly distinct. They might run into each other; one might be the consequence of the other; or each alone might pursue its course and produce permanent lameness. He could wish that the term spavin should be confined to that enlargement connected with the bony union of the metatarsals, which veterinary writers and horsemen had uniformly distinguished under that term; and that some other and appropriate name should be given to the inflammation and ulceration of the internal structure of the hock, and particularly of the cuneiform bones."

The Bone-Spavin is sometimes found among young horses, from the aptitude of employing them in draught at an early age; in such cases it is often curable, but in the older animals it is more difficult to get rid of.

Treatment.—This is another disease in which the farriers vied with each other in exercising their cruelty to the unhappy beast; the older treatment not being dissimilar to that employed in Splint. The most usual method of the present day is more simple, although not always efficient. Blistering is sometimes found to produce all the effects desired; but in obstinate cases we look in vain for a complete absorption of the bony deposit, although the removal of all inflammation of the ligaments can be brought about. The last thing to which we may have resort is firing. All hopes of a perfect cure, however, must greatly depend on the time exostosis has been forming. At the Royal Ve-

terinary College many cases have been successfully treated by means of the seton.

Anchylosis, or Stiff Joint,

May arise from two causes: First, from the continued violent exercise to which some horses are subjected, when the synovia or liquid which moistens the surface of the joint bones in their action against each other becomes encrusted or ossified; and, secondly, from wounds when the synovia escapes outwards; and this more frequently occurs in the knee and hock, either from accident or from the mismanagement of ignorant farriers; sometimes it appears in the coffin and pastern joints.

Treatment.—This in the first place must greatly depend upon the length of time the disease has been progressing; although in most instances the cure cannot be perfectly effective, yet something may be done to palliate the symptoms. When wounds appear in the joint, the cure must be made by closing them as speedily as possible. Apply a small quantity of butter of antimony to the opening of the wound, and slightly sear it with a hot iron, then bandage it to keep the air away; a fomentation of marsh mallows may be used to keep down the swelling or inflammation. The antimony may be used every other day until the wound has healed

Curbs,

Are enlargements on the back part of the hock, and

situated generally about four or five inches below the point of the hock. Any sudden action of the limbs will produce them, as racers have "thrown out curbs" after trials where their speed has been severely tested, as also have hunters in leaping and galloping over very heavy soil. Such horses as are *cow-hocked* are very subject to Curbs. This disease is especially a mark of unsoundness, for the horse requires a long period of rest to be thoroughly cured, and if too early worked or exercised the lameness is sure to return. Blistering is the usual mode resorted to, and in obstinate cases firing. When the inflammation and lameness is very great, bleeding from the subcutaneous vein, and gently physicing, has been found necessary.

Thorough-Pin

Is a swelling on the two opposite sides of the hock-joint, and is so called from its appearance of running from side to side through the joint. Unless very large, it seldom occasions lameness, although it is a sign that the animal has been subjected to undue work. These swellings being somewhat akin in their nature to Wind-galls may be treated as under that head.

Bog and Blood-Spavin,

Are allied together. *Blood-Spavin* presenting "something like a varicosed enlargement of the superficial vein passing over the inside of the hock; which, however, appears by no means a spontaneous disease in the vessel, but is the consequence of the pressure of a distended bursal capsule underneath, which, it-

self becoming sufficiently prominent to attract notice, is called *Bog-Spavin.*"

This latter is far more dangerous than the former disease, as it is with great difficulty acted upon. Horses affected with either are very unfit for hard work, or such as requires speed, which usually brings a lameness. A bandage so contrived as to leave the point of the hock free, and having a considerable pressure on the other parts, will cause the absorption of the fluid; this, however, is not easily contrived, and modern practitioners have recourse to the blister, and if this does not prove efficient, firing may be resorted to, although Bog-Spavin will generally return despite all our efforts to remove it. The old method of passing a ligature both above and below that portion of the vein which was enlarged, is now discontinued as absurd and useless. Blood-Spavin is of much rarer occurrence than Bog-Spavin, the one being generally mistaken for the other.

Windgalls

Are consequent on violent exercise and hard work; they are situated just above the fetlock-joint, and consist of small swellings which yield to the pressure of the finger and immediately return on its removal. All horses are more or less subject to them, and they are found more frequently on the hind than the fore-legs. If they are not large, a run at grass will often remove them; if, however, lameness should accrue, first apply a bandage or roller to each leg; these must be wound tightly round the enlargements to produce any effect, and wetted with a lotion of four parts of vinegar to one of spirits of wine. After this, if they

are not lessened, or should they return with exercise, blister, and, as a last resource, firing generally absorps the fluid, reduces the swellings, and prevents any re-appearance of the disease.

Lameness in the Stifle.

In cases of this kind, which are of rare occurrence, except from Spavin or a kick from another horse, fomentations, rest, and bleeding, will be found the most efficient remedies.

String-Halt, or Spring-Halt,

Is a peculiar and involuntary catching up of the hind leg higher than is necessary for the ordinary motion of the horse. No cure has ever been discovered for it, but this may arise from the precise cause and nature of the infirmity being involved in some obscurity: fortunately, however, no injury accrues to the horse from it, although its appearance is ugly.

Capped Hock,

Is not generally accompanied with lameness, but the appearance is very unsightly. It is usually found in horses given to kicking, hence all afflicted with *capped hocks* are regarded with a suspicious eye. It is sometimes occasioned by not allowing the animal a sufficient bed or litter. Blisters are the most effectual remedies, although when the swellings have become very large and callous they cannot be removed.

Mallenders and Sallenders.

Scurfy or scabby eruptions are sometimes found at the bend of the knee, and these are termed Mallenders; when the same appearances are seen inside the hock, they assume the name of Sallenders. They do not occasion lameness, but are very unsightly, and when left to themselves, will degenerate into an ichorous discharge not easily got rid of. They are easily cured by smearing with the following ointment:—

Tar - - - - -	2 ounces.
Sugar of lead - - -	1 ounce.
Lard - - - - -	6 ounces.

And if this fail, a weak mercurial ointment may be used. Eeither of these diseases denote bad stable-management.

Lameness in the Round or Whirl-bone,

Is generally known by the horse dragging the leg after him on the toe. Any injury to this bone, which constitutes the hip-joint, is treated with considerable difficulty from its situation; uckily, however, it is of rare occurrence. Foment with camphorated spirits of wine, and if the relief is not speedy, blister repeatedly. In some obstinate cases it may be necessary to fire the part.

Lameness in the Coffin Joint,

Sometimes occurs when the animal stands with the toe forward, keeping the pastern in a straight line with

the leg to ease the ligaments, the injury of which causes the lameness. Blisters applied to the coronet are the best means of cure, which should be speedy, as the use of the joint may soon be lost if the ligaments become ossified. This lameness is often confounded by ignorant persons with affections of the shoulder. When the sprain and heat of the coffin-joint is but slight, fomentation and bleeding has been sufficient. It is the ossification of the ligaments of this joint that degenerates into Ringbone.

Broken Knees

Are always to be regarded with suspicion, and a careful scrutiny of the make and action of the horse is requisite when any blemish appears on the knee; not but that a bad rider or a trifling accident has been known to throw the most perfect horses, and consequently some judgment is required in discerning the qualities and motion of these animals. When a horse has fallen, if the skin only be affected, after washing the knee carefully with warm water, some have applied a blister to promote the growth of the hair around the blemish, and by contracting the wound, make the spot or scar less perceptible when healed. The use of ointments to produce hair on the scar is at once fallacious and absurd, although the use of gunpowder and lard is resorted to, which blackens the part, and thus partially conceals the blemish. If, however, the joint be affected, and the oily fluid flow from the wound, the first care must be to stop it, for which refer to Anchylosis, page 57. If, however, the orifice is very great, and the joint-oil continues to flow, the case is hopeless, and the wisest plan is to destroy the animal. This it

may be remarked is in extreme cases, which do but seldom happen. The old practice of injecting stimulant fluid into the wounds, is now abandoned as useless, and is one of the many cruelties the farriers of by-gone days used frequently to have recourse to.

Strains in the Back-Sinews

Are very serious, and require the greatest attention, and are generally a distention of the sheaths of the tendons, and more rarely of the tendons themselves. Violent exercise of all kinds, as galloping, leaping, &c., produces this complaint. As usual with every disease of a similar nature, the usual accompaniments are inflammation, swelling, and tenderness. The first attempt must be to subdue that inflammation by bleeding the thigh or plate-vein, according as the injury is situated before or behind. The use of warm fomentations are useful, and sometimes blood may be aptly drawn from the toe. Some cases require blistering, but never use any thing of that nature while heat and tenderness exist, as severe sprains when treated badly often require to be fired, which must always be done in straight lines. Rest is perfectly requisite in all cases of strain or sprain. In ordinary cases, after subduing the inflammation, a bandage bound round the part affected, and gradually increasing the pressure on each removal of it, will suffice. After firing for the severer sprains, six or eight months run at grass will conduce to a horse's benefit.

Rupture of the Suspensory Ligaments,

Or "*Breaking down*," as the farriers term it, is an

accident of a very serious nature; and since it is but very seldom cured, we must consider it very fortunate that its occurrence is rare among horses. It has not unfrequently been taken for a rupture of the flexor tendons, but the great strength of these latter organs does not readily admit of such a circumstance, consequently *their* rupture is even still rarer than the Suspensory Ligaments. If the tendons were thus affected, the animal could not bend its leg; and in the other case the fetlock-joint comes nearly to the ground instead of maintaining its oblique and natural position. After the inflammation is reduced, a *heeled shoe* is used by some, which elevates the heel and bends the toe downwards. Bandages cannot be well applied from the position of the disease. Firing is resorted to, and thus in time a little strength is obtained, and the animal may be used when great exertion is not required, for as the fetlock never wholly recovers its natural position, much of its mechanical power must consequently be lost.

Lameness in the Shoulder,

Is by no means so frequent as some suppose, for it is a very general practice among farriers and others to attribute any lameness, of which there is no visible cause, and of which they cannot give any ostensible reason, to an affection of the shoulder; and from this many serious results often accrue to horses. The adductor muscles are frequently the seat of this disease when it arises from a slip or side wrench. Some assert it exists in the tendons of the flexor brachii; and sometimes the scapular and humeral ligaments of the articulations are affected. On the appearance of this

lameness, (which may be detected from its existence in the foot and other parts of the limb by the peculiar movement of the leg, and the method of resting the foot on the ground), first subdue the inflammation, and that if great, must be done by bleeding the plate-vein, and foment with camomile flowers three or four times a day. When the ligaments are affected, it has been deemed necessary to insert a rowel in the chest. When the inflammatory symptoms have been removed, a blister has effected much good in some cases. When the muscles appear stiff and affected, the application of a liquid blister, as—

Cantharides - - - -	8 or 10 ounces,
Oil of Turpentine - - -	2 quarts,
Sweet or Olive Oil - -	1 quart,

used twice a day; and when it brings on a fresh swelling and inflammation, allow it to subside, and then rub the parts affected a second time, and the probability is a cure will be the result. Farriers of the old school, sometimes imagining that dislocation had taken place, used to turn the animal into the water to swim to effect a remedy. Great benefit will be derived from turning a horse to grass after the shoulder has been strained, as great fatigue and exercise will cause a relapse, and all sprains or strains require rest and ease.

Overreach,

Is what some horses cannot avoid, and care should be taken to place the hinder shoes as far back as possible, as when the hind foot strikes the fore leg, the consequence is the disease just named. If the flexor tendons be struck and inflamed, as is not unlikely to

be the case, refer to " Strains in the Back Sinews," and treat accordingly

Warbles.

When the saddle or harness presses too heavily, tumours are formed, known under the name of Warbles, which may be soon removed by means of saturnine washes, as vinegar, &c.; but when neglected, they will degenerate into what is termed Sitfasts; and these are so named from a callous skin not unlike leather in its appearance, being seated in the centre of the ulcer, and this cannot be abstracted without great pain; some farriers are rash enough to tear it away with pincers. The best method is to introduce a seton, or apply a blister, and if it is still obstinate, dissect it carefully, and let the wound be dressed with Turner's cerate.

GUN-SHOT WOUNDS.

Though of rare occurrence, except in times of war and commotion, still seem to demand a place in a wor of this nature, which is intended for universal prac titioners. Gibson says—

" Gun-shot wounds can be considered in no othe light than as contused wounds. In those made by a musket or a pistol-ball, the most immediate considera tions are to extract the ball, or any other extraneous body which may be lodged in the wounded part, and to stop the haemorrhage, if there be any effusion of blood from the rupture of any considerable artery.

It is frequently necessary to enlarge the wound, in order to extract the ball, and if it has gone quite through, (provided the situation of the part wounded will admit of its being done with safety,) the wound is to be laid open freely through the whole length of it, by which means any extraneous body will be more readily removed, and the cure facilitated. In order to get at the ball, or any other foreign matter, probing is to be used as sparingly as possible; and this must evidently appear necessary to any one who will only consider the nature of the symptoms attendant on penetrating wounds of the chest or belly, either from a bullet or a sharp instrument, the thrusting in a probe to parts under such circumstances being unavoidably a fresh stab on every repetition of such practice. If probing be necessary, the finger should be preferred as the best and truest probe, where it can be used; and where it can not, a bougie may answer the purpose. If a ball, or any other foreign body, happens to be lodged near the orifice, or can be perceived by the finger to lie under the skin, though at some distance from the mouth of the wound, we should cut down to it, and take it out; but when it is sunk deep, and lies beyond the reach of the finger, it must appear evident, upon the least reflection, that the thrusting first a long probe in search of the bullet, and then, as has been practised likewise, a larger pair of forceps, either with or without teeth, into a wound of that kind, though with a sort of certainty to extract it, must either contuse or irritate and inflame the parts to a greater degree, and, consequently, do as much or more mischief than the ball did at first, by forcing its passage such a length of way. And should the forceps at the same time lay hold of any considerable artery or nerve along with the ball, (which can scarcely fail to hap-

pen), what injurious consequences must attend such proceedings! Nor would attempts of this sort be less injurious, in case a bullet should happen to be lodged in the cavity of the ball or chest. Such attempts are the less necessary because a great number of instances have occurred where balls have quietly lodged in several parts of the body, till, after many years, they have worked themselves a passage towards the surface, and were very easily extracted; and many, where balls have been entirely left behind without occasioning any inconvenience. In case the wound be occasioned by a musket or pistol-shot, and of course but small, it will be deemed necessary to dilate it, without delay, provided the nature of the part will admit of this with safety, for in wounds near a joint, or in very membraneous or tendinous parts, the knife, as well as the forceps, should be put under some restraint, nor should any more opening be made than what is absolutely necessary for the free discharge of the matter lodged within. Where the wounded animal has not suffered any great loss of blood, (and this is generally the case), it will be advisable to open a vein immediately, and take a considerable quantity, and to repeat bleeding on the second, or even the third day, should occasion require. The letting of blood in some of these cases is attended with great benefit, for it prevents a good deal of inflammation, and lessens any feverish attack, forwards digestion, and seldom fails to obviate imposthumations, and a long train of complicated symptoms which are apt otherwise to interrupt the cure, and often to endanger the life of the patient. Where the feverish symptoms run high, and even when there is almost a certainty that matter is forming, bleeding is very frequently of great advantage. If it so happen that a gun-shot wound has penetrated any of the large

joints, and in passing through them, fractured the end of the bones, it will then be found for the most part impossible to effect a cure, or even to save the life of the patient, and therefore it is the best and most humane course to destroy the animal to save him from pain and misery.

Horses are much easier cured of gun-shot wounds than the human species: this arises from the latter being impressed generally with anxiety, from which the animal is free; hence the irritability is much less in the one than the other, and the horse displays no symptoms of uneasiness till the constitution is affected.

Treatment.—Should any substances of a hurtful and irritable nature have been carried with the ball into the wound, it would be best to try and extract them, otherwise probing the wound unnecessarily only gives pain and does not advance the cure. If the wound becomes ulcerated, treat it as under article *Ulcers*. Fever often accompanies gun-shot wounds, when it were good to give laxative and cooling medicines.

In treating these cases, Gibson says—

"Where a ball has penetrated quite through any part, both orifices must be kept open till the wound is filled up with new flesh, and no bad symptoms remain, as pain, swelling, or inflammation, which in those gun-shot wounds that enter the bones as well as the flesh, would denote the existence either of extraneous matter, or of splinters, which must be removed by gradually enlarging the most convenient orifice. But in most internal this is unnecessary, because the bullet can seldom be brought out the same way by which it entered. I have known leaden bullets lie many years in men, especially in the abdomen, without any great

pain or danger; and those that have gone deep in the flesh and beyond reach, make their way sometimes from places where they could never be expected to appear. Many extraordinary instances of this kind are upon record in the surgical transactions of different parts of Europe." He adds, "I have known bullets pierce through both flesh and bones in men, making a round smooth passage like an anger-hole, and been as easy of cure as a flesh wound, except when they have penetrated or grazed the joints. In these cases horses may be rendered useless, even though the wound be cured."

In most cases where the bones are very much splintered, the horse is rendered useless, and the best plan is to destroy him. Fungous flesh will sometimes grow to wounds, which is bad, and should be stopped by smearing the part with red precipitate, or washed with vitriol and water.

SPASMODIC COLIC, OR GRIPES,

Is a disease by no means unfrequent among horses, and sometimes has a fatal termination. The symptoms, however, which accompany it, are not unlike those attendant on inflammation of the bowels, or the *red colic* of the farriers, consequently it is highly necessary to be able to discern between the two, as the treatment is materially different in each case.

Causes.—The common practice of allowing horses to drink, and of using cold water externally, when heated from work or exercise, is a very common cause.

The too sudden use of green food after being some time accustomed to dry only. Costiveness may occasion it, and in such cases the attack is considerably more dangerous than in ordinary cases. With some horses it has been accounted constitutional.

The *Symptoms* of this disease are very sudden: without any apparent warning the horse becomes restless, pawing the ground, shifting from side to side in his stall, and occasionally striking his belly with his feet; and when the attack is very severe, he will lie down, and then rise suddenly; sometimes rolling about on his litter: the pains, however, are frequently intermitting, when the animal feels a momentary relief, and then the spasm returns with greater violence than before, which is evident from the general uneasiness of the horse. After a duration of from ten and twelve to twenty hours, inflammation will take place, and death often follows.

Treatment.—When simple spasm alone exists, the medicines which may be efficaciously used are very numerous; at the head of these we may place turpentine and opium, which are almost universally given.

Spirit of Turpentine - - 3 ounces,
Tincture of Opium - - 1 ounce,
Pepper (ground) - - - 5 or 6 drachms,

made into a drink with half a pint of warm ale, will oftentimes act speedily in giving relief.

Mr. Paris, in an article in "The Veterinarian," says he has often given—

Oil of Turpentine - - - 4 ounces,
Tincture of Assafœtida - - - 1 ounce,
Spirit of Nitrous Æther - - 1 ounce,
Spirit of Hartshorn - - - ½ ounce,

and repeated the same every second or third hour; but when he has been compelled to use it as a fourth dose, he has added

Tincture of Opium - - - 1 ounce,

and has always been successful with these draughts. At the same time he asserts having given a quart of the turpentine, and half a pint of the several other articles above specified, within a space of twenty-four hours. And such undoubtedly may have been done, for when any spasmodic affection occurs in either man or animal, stimuli, which would in ordinary cases have proved pernicious or fatal, have been used in powerful doses with great efficacy.

Mr. Bracey Clark was so far possessed in favour of pimento, or pepper, as a remedy in cases of spasmodic colic, that he has written a treatise to that effect, and pointed out the many virtues of that spicy stimulant. His recipe is this :—in 3 pints of spirits of wine, and three pints of pure water, steep 1 pound of pepper, ground very fine, and give a quarter of a pint of this tincture every hour till the animal is relieved.

Mr. Percival recommends opium with a decoction of aloes, which has the effect of opening the bowels, at the same time that it assuages the spasm.

When costiveness accompanies spasmodic colic, Mr. Blaine gives the following :—

Spirit of Turpentine - - -	2 ounces.
Oil of Peppermint - - - -	1 drachm.
Castor Oil - - - - -	6 ounces.
Watery tincture of Aloes - -	6 ounces.

In these cases too great stress cannot be laid on the necessity of back-raking, and the application of clysters, as early as possible. The horse may often obtain relief from rubbing the belly with a brush or coarse cloth or flannel, but nothing harder.

Many bleed at first; but if the symptoms be acute, nothing can be better; and joined with internal antispasmodics, as opium, &c., the good effects have been too frequent not to be strongly recommended.

In most cases of spasm horses are apt to perspire very considerably; the wet clothing should consequently be removed, and dry ones substituted in their place. Avoid exposure to cold for a day or two after any violent attack, and feed on bran mashes.

INFLAMMATION OF THE BOWELS.

Is of two kinds:—1st., When the external coat of the intestines is affected; 2nd., When the mucous or internal coat is diseased: and this last is generally caused from an excess of purging.

The inflammation of the external coat of the intestines is often a very fatal malady; and runs so short a course, that the symptoms should be readily known, and the remedies quickly applied, and that, too, effectively.

Causes.—Exposure to colds—drinking too freely of cold water when hot—sometimes from the lungs the inflammation proceeds to the bowels—lastly, colic will degenerate into it.

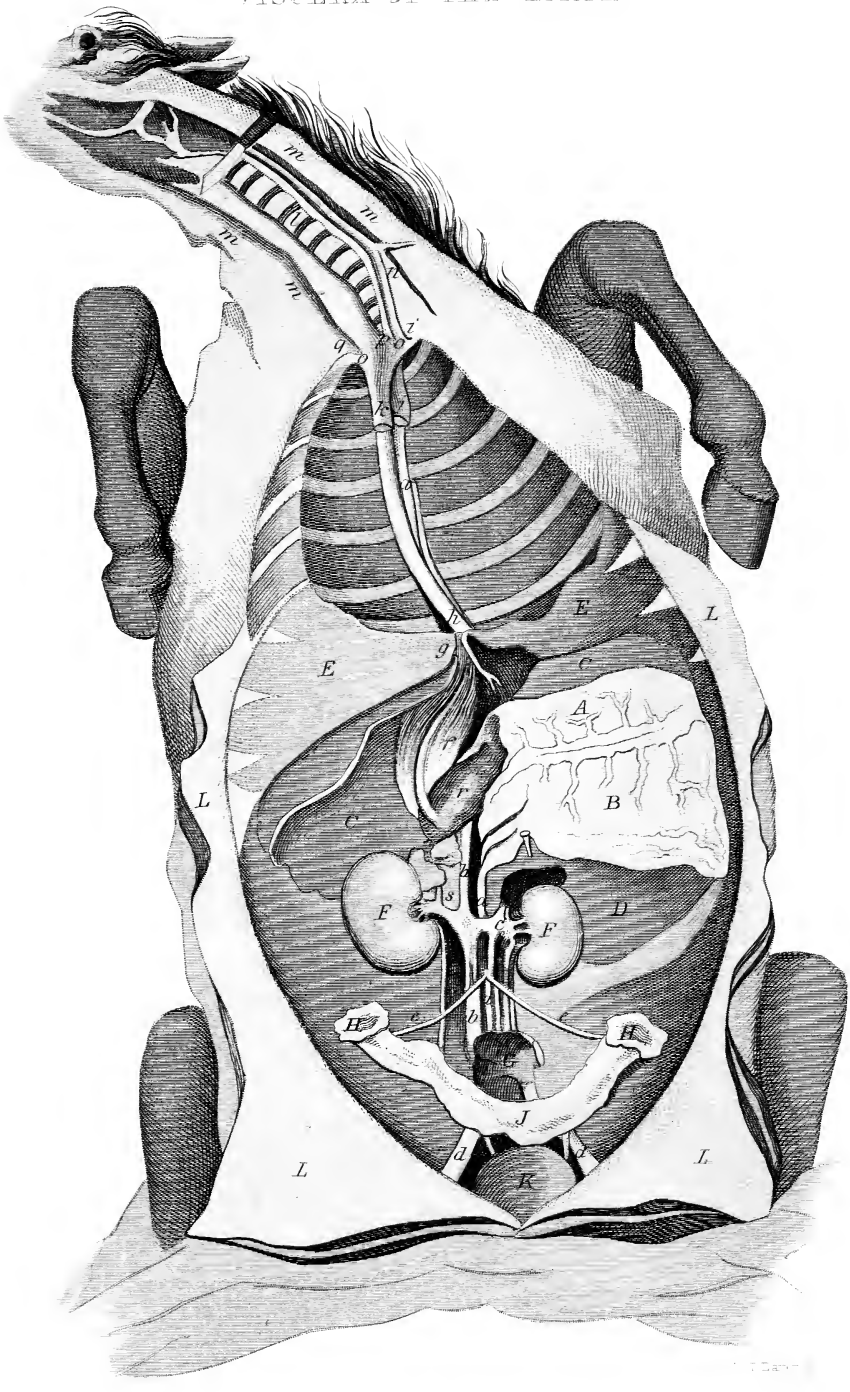
Symptoms.—It usually commences with slight fever attended with occasional shivering and restlessness; loss of appetite soon follows: the pulse is rapid and contracted within its usual size, and beats at the rate of 90 to 100 strokes.

Mr. Youatt has given the following table as a means of distinguishing between the symptoms of colic and inflammation of the bowels, as the treatment which is beneficial in the first case, is generally fatal to the second :—

Colic.	*Inflammation of the Bowels.*
Sudden in its attack.	Gradual in its approach, with previous indications of fever.
Pulse rarely much quickened in the early period of the disease and during the intervals of ease, but evidently fuller.	Pulse very much quickened, but small, and often scarcely to be felt.
Legs and ears of the natural temperature.	Legs and ears cold.
Relief obtained by rubbing the belly.	Belly exceedingly tender, and painful to the touch.
Relief obtained by motion.	Motion evidently increasing pain.
Intervals of rest.	Constant pain.
Strength scarcely affected.	Rapid and great weakness.

The *Treatment* in this case should always be energetic and active. Bleeding must be resorted to in the first place. Seven or eight quarts of blood may be taken with safety, and if no relief is given in the course of a few hours, five quarts more may be drawn away if the horse is full and plethoric. A clyster must next be thrown up, previous to which it is necessary to back-rake ; and by no means make use of purgatives, as they would effectually kill the animal. Tobacco-clysters have sometimes been used with effect. External inflammation must then be excited by means

VISCERA OF THE HORSE.



of a blister upon the belly, as near the seat of the disease as possible. Cantharides will be quick in their action, but mustard made up with turpentine will be better. If the clysters fail, mild laxatives may be used, given as draughts in gruel—castor oil and aloes will be strong enough. Green food is best while the animal is suffering from the effects of this disease; frequent rubbing of the legs, and a judicious quantity of clothing, is necessary. Several day's rest is required before the horse can be used, and the exercise should be gentle at first.

INFLAMMATION OF THE KIDNIES.

Is by no means very common among horses, but it is more frequently fatal from improper treatment, and a misunderstanding of the symptoms and causes, than the immediate fatality of the disease itself.

Causes.—Food will often cause it, as musty oats, or mow-burnt hay; exposure to cold; an awkward horseman, especially if heavy, will sometimes bruise the kidnies, and inflammation succeeds; and the same will follow when medicines in the quality of diuretics are used improperly, or in too great doses.

Symptoms.—A difficulty in passing urine, which often comes away bloody; great pain across the loins when pressed; and as the disease advances, the pulse becomes small and very quick.

Treatment.—Bleeding should be promptly resorted

to, and that liberally. If costiveness exists to any extent, back-rake, and then use a clyster; in some cases an active aloe purge may be administered likewise; but at all times abstain from diuretics, as very injurious and dangerous. Turpentine and cantharides should also be avoided; but a mustard blister across the loins will be an effective remedy in producing counter-inflammation. Nausea will tend greatly to allay the inflammation, for which purpose

White Hellebore - - - 1 drachm,
Emetic Tartar - - - 1 drachm,

may be administered as a draught in camomile tea every five or six hours. This is to be given after the purge has produced its effect. The animal should be warmly clothed. The symptoms of this disease are very similar to inflammation of the body or neck of the bladder, suppression of urine being the effects of both. To ascertain if the bladder be affected, it will be necessary to pass the hand up the rectum, and the bladder will be no hotter than the other parts when the kidnies only are affected, whereas in the other case the bladder is exceedingly hot and tender.

INFLAMMATION OF THE BLADDER.

When the body of the bladder is affected, the symptoms and cause are very similar to the last disease; and the only difference in the treatment, is, that the horse should be allowed to drink freely, and warm clysters of gruel may be carefully thrown into the bladder, but this requires a person of some knowledge and judgment of the structure of the horse.

In inflammation of the neck of the bladder, which is easily known by feeling that organ directly under the rectum, and will be full of urine, the first object must be to relax the spasm, which contracts the neck and compresses the muscles, thus obstructing the free passage of the urine.

Treatment.—Bleed copiously; sometimes this has been done till the animal was exhausted, and the disease has disappeared. The nauseant given in the disease of the kidnies may then be tried; and if the case is obstinate, apply a blister, and give a drachm of opium in a ball.

When the bladder is affected with stone, diuretics are useful to cause a full flow of urine. Cutting for the stone seldom succeeds in horses

DISTEMPER, OR INFLUENZA.

This is a species of cold which attacks horses at certain seasons, although it rages with different epidemic symptoms in different years, and is occasionally prevalent only in certain districts. In the spring, when the animals are shedding their hair, easterly winds are more common than at any other season of the year, and the change from wet to dry, from cold to heat, is very irregular; being then more defenceless against cold, this disease often makes its appearance.

Two opinions are held respecting it, some asserting it to be highly contagious, others, again, disputing that point. Gibson, however, tells us of a highly contagious influenza which made its appearance in London in

1732. His account is very precise and excellent. He says—

" That the horses were seized suddenly with a dry-sounding cough, which shook them so violently that they appeared ready to drop with hard straining and want of breath. Their throats were sore, and the glands were much swelled and inflamed, and painful to the touch. For the first two days most of them refused all manner of food as well as water ; and had so many other bad symptoms, that when this distemper first broke out it seemed to threaten a mortality among them. Indeed, the only good sign they had was a running at the nose, which generally began on the third day, and continued in a very profuse degree for five or six days. While this secretion continued they could not feed much, though their appetites were not deficient. Hence they lost their flesh exceedingly, whilst the violence of the complaint lasted; but as soon as the distemper abated, they began to eat voraciously, and soon recovered. This distemper, though seldom fatal, yet was so very catching, that when any horse was seized with it, those horses that stood on each side of him were generally infected as soon as he began to run at the nose. While this sickness lasted, about one hundred troop-horses under my care were seized with it. I always caused the sick horses to be separated from those in health, and in one troop of horse-grenadiers we filled a stable of thirty-six stalls in three days, and another of eighteen in three or four days more ; nevertheless, all of them recovered in a short time. And many other horses belonging to private gentlemen that were placed under my care did well, without any remaining injury from the distemper ; and it was remarkable that some which had been subject to a dry cough before this sickness continued, were

free from it for some time afterwards, though I do not remember that any of them were absolutely cured of it.

" The horses that chiefly escaped the distemper were those that had been kept in constant strong exercise, or full aged horses, many of which remained uninfected though very much exposed to it. The method of treating the malady, as may be supposed, was simple and easy. As soon as the horses were attacked, they were bled plentifully, which evidently gave them relief, many of them being feverish and very short-breathed.

" Afterwards mucilaginous drinks, in which linseed, liquorice, and garlic were predominant materials, were exhibited, and with these were given balls made of the aromatic powders mixed with honey, balsam of sulphur, and the oils of aniseed. In some cases it was thought necessary to give about half a pint of white wine with a few ounces of oxymel and squills. After they began to run at the nose, the complaint began to abate ; and as soon as the horse looked somewhat lively, and began to eat, the use of the medicines was suspended, and he was allowed plenty of water, with free air and exercise.

" This disease it seems began near London about the middle of September. It became general in about six weeks or two months, and made so swift a progress, that in the space of one week there was scarcely a stable without the infection. The time of its continuance in each horse was but short. Some horses were perfectly recovered in a week or ten days, some in a fortnight, and few continued under it longer than three weeks or a month before they recovered their flesh, and their usual strength and vigour. Scarcely any indeed did amiss, except such as had been unskil-

fully treated, by syringing their noses with sharp stimulating liquids, which, by irritating the membranes already too much inflamed, brought on ulcerations and a continued discharge of purulent matter that could not be stopped, with swellings of the glands, which ended in caries of the bones.

" About ten years afterwards, in 1734, another epidemical disease happened. This proved more fatal than the former, though from its short continuance it was much less noticed, for many horses recovered so far as to be out of danger in two or three days. In this the horse coughed violently, and many of the hackney-coach horses and cart-horses that were obliged to work were observed to run greatly at the nose.

" Some were seized suddenly with a high degree of fever, and their flesh apparently seemed so sore and tender, that they could scarcely bear to be touched. They were generally costive, staled but little, and that with pain and straining, and the urine was of a very high colour. They refused all manner of sustenance, and were so extremely sick that they could not drink, neither would many of them lie down, till the disease came to a crisis; yet with treating them with cooling and opening medicines, and with plentiful bleeding, they generally recovered. Some of the horses affected with it had very hot and inflamed eruptions, which broke out in several parts with blisters resembling erysipelas. Those that came to maturity appeared generally on the inside of the arm or fore-legs, near the elbow or towards the neck; and some of them had large bags of water collected on their sides or bellies, or towards their flanks near the inguinal glands, constituting what the farriers called the Water-farcy. Some had been costive before they were seized, for their dung was extremely hard and black. Under

these circumstances, soft and oily clysters were injected to relax the bowels, and in some cases the bleeding was repeated; cooling infusions were given, with nitre, cream of tartar, &c., with a view to promote both dung and urine, and by that means to abate the febrile heat. This, in fact, not only took off the fever, but caused critical discharges from the boils, which at first had but a very indifferent aspect, to digest into good matter; so that none of the horses that were thus treated did amiss; and where some died in the hands of unskilful persons, it was generally owing to their giving them cordials before the fever abated, and their stomachs were in a condition to receive food."

Causes.—This disorder appears from general observation to arise from the liability of the constitution to be affected at particular times of the year, as the spring and fall, &c.

Treatment.—This must depend entirely on the violence of the attack and the symptoms exhibited; generally there is a slight fever, and if the animal has a cough which does not materially distress or weaken him, after taking a little blood, and attending to the state of his bowels and keeping them open, hopes may be entertained of a speedy recovery to his former state of good health. Should the soreness of the throat cause a difficulty in swallowing, and show symptoms of great inflammation, when the glands under the ears become swelled, likewise a blister may be applied, and bleed according to the condition of the horse. The bowels must be opened, but not purged. A clyster may be given, and if the bowels appear obstinate to give the following aperient:—

Barbadoes Aloes - - - 1 ounce,
Castile Soap - - - - 1 ounce,
Ginger - - - - 1 drachm,

made into a ball with treacle or honey. Should the purging come on spontaneously, and the disorder not relieved by it, use opium or catechu to stop it. After which give—

Tartar Emetic - - - 2 drachms,
Nitre - - - - 3 drachms,
Cream of Tartar - - - 2 drachms,

made into a ball with treacle or honey, and administered twice a day. But should the throat be too sore to allow of the use of the ball, give the following draught :—

Emetic Tartar - - - 2 drachms,
Nitre - - - - - 3 drachms,

dissolved in six or seven ounces of water; to which add of

Simple Oxymel - - - 4 ounces,

given twice or three times a day, as the judgment directs.

Cordials must be abstained from in this disease, as they only serve to increase the inflammation. Keep the horse well clothed, and procure green food if possible. Bran mashes may be likewise given. When the breathing indicates any inflammatory symptoms on the lungs, a blister to the chest will afford relief.

Malignant and putrid epidemics of this kind have occasionally visited different countries; particularly one in Italy, in 1712, and circumstantially narrated by Lancisi. Osmer speaks of a distemper which he says was prevalent during no less a space than fifty years, and that very frequently the svmptoms were very malignant in their natures.

MANGE.

This is a cutaneous disease, the skin being covered with a pimpled eruption, and accompanied with great tenderness and an incessant itching. When once assured that a horse is afflicted with it, too great care cannot be taken that its contagious qualities may not extend to others. Not unfrequently has the disease been contracted by transferring the hand from a mangy horse to the healthy one; and it should not be forgotten that it may be propagated by means of the harness and trappings. Before the efficacy of chloride of lime, in dispelling the danger of contagion, became known, some careful farmers have thrown down their stables to prevent the possibility of infection. The mangy horse should have a brush and curry-comb distinct from the others, which ought to be burnt when the animal is cured: the clothing ought likewise to be well soaked in water, mixed with a fortieth part of the saturated solution of chloride of lime, and undergo a thorough washing with soap.

Causes.—Poverty, and want of cleanliness, are frequently the sources whence this disease springs. Horses allowed to range the road-sides, where grass is very scarce, and those which are allowed to eat much straw instead of good and wholesome nourishing food, become lean and thin; the digestive organs are weakened, and the constitution begins to fail, and the Mange is the consequence: not unfrequently, a defective perspiration produces it.

Symptoms.—It generally shows itself first at the root of the hair of the mane and tail, by a vast quantity of

scurf being gathered about those parts, and even before any eruption has commenced. When the horse is scratched or examined, on which occasion the short hair at the root frequently comes out, it may be looked upon as suspicious, which a few days will develope, by the appearance of spots of a watery nature on the body, and these shortly turn into scabby patches, devoid of hair.

Treatment.—When the condition of the horse is good, it will hasten the cure to bleed; but if the animal be poor and ill-conditioned, nutritive food ought to be immediately administered; which, as debility is overcome, will materially advance the cure. The following alterative may be used:—

Corrosive Sublimate - -	10 grains.
Nitre - - - - -	4 drachms
Cream of Tartar - - -	4 drachms.

This is best administered in a mash nightly. Ointments and washes of various kinds are used by different persons. With the above medicine, it will be found efficacious to use the following ointment:—

Flowers of Sulphur - - -	8 ounces,
White Hellebore - - -	3 ounces,
Hog's Lard - - - -	1 pound,

to which you may add a little oil.

This may be rubbed over the parts affected every second or third day; and if the horse be well groomed and taken care of, at the same time exercised moderately, the cure will be speedy.

The following is given by Blaine as a most efficacious ointment:—

Finely powdered Arsenic - -	1 drachm,
Flowers of Sulphur - - -	6 ounces,
Barbadoes Tar - - -	half a pound,
Train Oil - - - -	6 ounces,

and says,—"This was long my favourite form of Mange remedy; and next to sulphur there is no individual application so effective as terebinthinated. Mr. Percival speaks in high terms of tar and train oil: therefore, if sulphur be a specific, and tar little less so; and if in the mixture these do not interfere with each other, (and they do not); if a stimulant be useful, which tar is, then surely it is prudent to unite these benefits; and if so, the veterinarian cannot find a better remedy than this ointment."

Lotions have been applied with success, which some prefer as not being so dirty a process.

Corrosive Sublimate - -	2 drachms,
Spirit of Wine - - -	3 ounces,

to which, when perfectly dissolved by rubbing in the mortar, must be added three pints of a decoction from tobacco.

In the application of ointments, the scurf and scabs ought to be first removed by aid of the comb or brush, which will materially assist the unguent in penetrating the affected parts; and when mercury is resorted to both externally and internally, the mouth must be frequently looked to.

In very obstinate cases, the following may be tried:—

Mercurial Ointment - -	8 ounces,
Crude Sal-ammoniac - -	1½ ounces,
Flowers of Sulphur - -	5 ounces,
Soap - - - - -	2 ounces,

which must be made into a soft ointment, by the addition of turpentine.

It must be borne in mind that the Mange will be more speedily cured, by the ointments being well rubbed in, than by carelessly daubing it on. A brush may not be inaptly used for the purpose.

WARTS, OR WENS.

These are tumours found occasionally on different parts of the body. They seldom give any pain, and are very slow in growth; but are no more ornamental to the horse, than to the hands of a human being; cases of their producing lameness are very rare, and their birth is generally spontaneous. Many methods are resorted to in order to get rid of them. Occasionally they are cut off, and the root touched with caustic; at other times when cut, they are seared with a red-hot iron; and, indeed, unless some steps are taken, they spring up again. Where the knife cannot be used, the following ointment will serve to kill them—

Sal Ammoniac - - -	1 drachm,
Powdered Savin - - -	4 drachms,
Hog's Lard - - - -	5 drachms,

this must be applied every day. Gibson, speaking on the subject, says,—

"I was once concerned in the case of a very fine horse that had a large wen on the lower part of his neck, near the windpipe, which was cut off with a sharp instrument. It grew from a small beginning, not bigger than a walnut, to the bulk of a middle sized melon, without pain or inflammation; but at last it became troublesome, and affected the motion of the shoulders. This substance was then cut off, and it appeared to be no other than a mass of fungous flesh, a little variegated in its colour, and probably proceeding from a rupture of some very small twigs of the jugular arteries, which being enlarged by a continual afflux of the blood, caused so great an effusion of blood from the several orifices, that it was with difficulty stopped by the application of cautery."

A ligature of waxed thread bound tightly round these tumours, will cause them to drop off after some time.

Swellings, which sometimes rise on the cap of the hock, or on the point of the elbow, may be said to rank under this head.

EPILEPSY, OR FITS

Luckily this disease is not frequent among horses; but from a difficulty in discovering the precise origin of it, the animal ought, if valuable, to be placed under the care of an able and experienced professor, for if care be not taken, the habit of fits will soon be formed, often returning, at no very distant periods.

Causes.—These are various. Fulness of blood; overfeeding and want of exercise, may produce it. On the other hand, too violent exertion and surfeits tend to bring it on; care should be taken likewise that the collar has not too great a pressure when in draught, which prevents a free circulation of the blood, and obstructs its passage from the head.

Symptoms.—When first attacked, if in exercise, the animal stops suddenly, trembles, looks vacantly and irresolutely around, and presently proceeds; or otherwise staggers round, and falls insensible; where, after lying sometimes stretched out as dead, sometimes violently convulsed, he rises, and generally dungs and urines.

Treatment.—To prevent Epilepsy is no easy matter

when the horse is aged; but the following might efficaciously used in ordinary cases, as a cure:—

Camphor - - - -	1 drachm,
Tartar Emetic - - -	1 drachm,
Assafœtida - - - -	2 drachms,

mixed with as much liquorice-powder and honey as will make a ball of a convenient size. Administer one every night and morning, provided the bowels have been previously opened by a clyster; not unfrequently the following drink is preferred:—

Castor Oil - - - -	6 ounces.
Tincture of Opium - - -	4 drachms.
Prepared Kali - - -	4 drachms.
Ginger - - - - -	1 ounce.

This is administered once every twelve hours, in a pint of warm gruel. Bleeding a full plethoric horse, followed by mercurial alteratives, with an occasional purgative, and then turned to grass for three months, is recommended by Blaine as a successful method of destroying habitual Epilepsy.

PARALYSIS.

This is generally confined to the hinder parts of a horse, and is called *Paraplegia*. Palsy, or Hemiplegia, is very rare; on this occasion the brain is affeectd, the muscular powers are relaxed, and one side of the animal being paralysed, he falls, and all efforts to raise him are vain.

Causes.—Numerous causes might be assigned. A sudden slip, a heavy blow on the spine, being confined in a narrow stall and turning round too hastily, all

tend to weaken the vertebræ. Too much exercise, and when purging is checked too rapidly, will produce paralysis.

Symptoms.—The part affected becomes powerless, attended sometimes with an unusual shaking motion, most frequently of the hinder limbs. In extreme cases, the animal has been affected inwardly.

Treatment.—Old horses can rarely be cured; especially if over-worked when young. Should the disease appear in the younger animal, more hopes may be entertained of a cure. The treatment must, however, depend greatly upon the cause or the extent of the injury. The following purge may be tried successfully:—

Ginger - - - -	2 drachms,
Castile Soap - - -	2 drachms,
Barbadoes Aloes - - -	8 drachms,

made into a ball. The spine may be rubbed with warm terebinthinated embrocation.

Camphor - - - -	1 ounce,
Common Soap - - -	1 ounce,
Oil of Turpentine - - -	4 ounces,

will be found a useful embrocation, from its stimulating nature; this were best applied till the horse feels sensible of the parts affected. Internal remedies are not in general use, although *strychnos nux vomica*, (*vulg.*, crow-fig), has been used with some success; commencing with about eight grains, and gradually increasing it, taking care not to give the animal so much as will depress the action of the pulse, and create torpor.

APOPLEXY.

This disease seldom prevails among horses; in most cases it is incurable, as the animal drops down and soon expires, being somewhat similar to apoplexy in the human being.

Causes.—These are different in many cases. Generally, over-exertion, producing congestion in the chest, terminates in the brain.

Symptoms.—Some time before apoplexy comes on, the animal gives warning of its approach by bearing the head very low, the eyes appearing sleepy, with an occasional superabundance of saliva; the hearing is also affected, and a general weakness of the limbs. After remaining in this state any period from two to ten hours, the crisis arrives, and he falls, sometimes dying immediately; at other times, exhibiting symptoms of violent convulsions.

Treatment.—Bleeding should take place immediately, and that copiously. The jugular, or common neck-vein, is the best for the operation, as that will sooner relieve the brain, from the impossibility of getting near any artery which supplies the brain with blood: this may be followed by gentle purges.

DYSPEPSIA, OR LOSS OF APPETITE.

Causes.—Loss of appetite is usually the forerunner of all diseases; and when other symptoms show themselves, should be treated accordingly. When it comes

alone, it arises from the irregularities to which the horse is subject when changing its hair; or from the use of indigestible food, fatigue, too sudden exposure to cold, and various other causes. Worms invariably produce loss of appetite, and should be treated accordingly.

Symptoms.—This disease is usually accompanied with a rough and shaggy state of the hair, the appetite very irregular, and the food passes away undigested.

Cure.—This must be effected according to the symptoms: when solely arising from the improper use of food, and causes such as would naturally lead to loss of appetite, and unattended with fever, a gentle stimulant would be found efficacious: at the same time, care should be taken that the complaint does not arise again from similar circumstances.

Ginger, Powdered - - - 3 ounces,
Carraway Seeds, ditto - - 8 ounces,
Gentian, ditto - - - 6 ounces,
Oil of Cloves, or Anniseed - 5 drachms,

mixed with honey, molasses, or lard, and made into a dozen balls, will strengthen the stomach.

Some persons employ the following:—

Carraway Seeds - - - 4 drachms,
Grains of Paradise - - - 3 drachms,
Ginger - - - - 1 drachm,
Oil of Mint - - - - 24 drops,

made into a ball with syrup or honey.

During the process of either of these medicines, gentle exercise is recommended daily. This disease is commonly called *Chronic Indigestion*.

HERNIA, OR RUPTURE.

This is when a portion of the intestines protrudes from some cavity in the belly, which is either natural or artificial. But there is yet another kind of hernia, and one more common among horses than the former; this is *Strangulated Hernia*, and is found on the scotum of the stallion, and on the groin of the gelding; this is very seldom known among mares.

Causes.—Violence produces hernia more frequently than any other cause, horses being urged to perform more than their powers will admit of. When restive, careless grooms, when in haste, will kick the animal in the abdomen; rearing and kicking, struggling during the performance of an operation, all these causes will produce hernia. The rowel of a spur is stated by Gibson to have caused it when pressed too hard against the side.

Symptoms.—A general uneasiness, a rolling from side to side, lying down for a few moments, and then rising, as if to procure a relaxation of pain; tumours on the groin, sometimes soft, sometimes hard.

Treatment.—Unless the case is very slight. from the impossibility of tying bandages round the parts affected, it is incurable; if it is recent, some relief may be given by bleeding, and giving oily clysters: fomentation of the part frequently during the day with vinegar and camphorated spirits warmed. Poultices are also used with effect. Girard gives some lengthened advice on this disease; and Blaine may be consulted with advantage by those who wish to study the subject deeply.

Ordinary practitioners are unfit to treat hernia properly: horses, when afflicted, ought to be put under the care of some experienced veterinarian, when more hopes may be entertained of a cure, than the unskilful could effect.

RHEUMATISM.

Many opinions were entertained on this disorder; some doubting its existence in the horse; but who, at the same time, could not account for "some anomalous symptoms on any other pathological view." It is now, however, universally allowed to prevail, and consists of two kinds, *acute* and *chronic*. Gibson has written on acute rheumatism, under the name of *external pleurisy;* it was so called from the intercostal muscles being looked upon as the parts affected, and not unfrequently attended with a couch. Farriers have known it as the *Founders*, from the stumbling gait not unusual when afflicted with rheumatism in any part.

Causes.—Horses that have been accustomed to warm stables are subject to it when exposed too suddenly to cold or rain; atmospheric transitions of all kinds ought to be carefully avoided, as they are apt not only to produce rheumatism, but may possibly lead to some other disorder.

Symptoms.—The first kind, viz., *acute* rheumatism, is sometimes forerun with a slight fever, alternate cold and shivering sensations followed by heat; the forequarters and extremities are most commonly attacked.

The limb affected is moved carefully, and bent with great reluctance. *Chronic* rheumatism is the consequence of the former; especially when it has been seated in the loins and fore-quarters. Sometimes both are affected together, and the animal is unwilling to lie down, from the pain attending his rising.

Cure.—Purges are often administered; and the application of strong camphorated, ammonia embrocations or ointments; gentle exercise, and a moderate degree of warmth kept up in the system. When the purge has taken effect, the following may be given for three nights:—

Sulphur - - - -	2 drachms,
Assafœtida - - - -	1½ drachms,
Ginger - - - -	1 drachm,
Soap - - - - -	2 drachms,

mixed into a ball with treacle or honey.

Ammonia - - - -	5 drachms,
Camphor - - - -	6 drachms,
Oil of Turpentine - -	1 ounce,
Hog's Lard - - -	6 ounces,

will give relief to the parts affected, by rubbing it well in frequently. A brush may be used very properly, as friction is found beneficial at times

DIARRHŒA.

This disorder afflicts many horses on the slightest exertion, which proceeds from their bowels not having a sufficient space to perform the functions of nature, in consequence of their bodies being formed narrow and

lank. It is generally attributable to a greater secretion of fluid in the intestines than ordinarily, from its not being absorbed as it should be. It is not, generally, fatal.

Causes.—Change of food, especially from hay to grass, will produce this complaint—defective make—unwholesome food—exposure to cold. A morbid change sometimes occurs in the secretions of the bowels and stomach, and the organs become irritated, and requires extreme care.

Treatment.—Change of diet will sometimes produce a cure; but, generally, the following will be found useful, and given twice or three times a day:—

Tincture of Opium - -	1 drachm,
Catechu - - - -	2 drachms,
Common Starch, boiled thin -	1 pint,

and according to the increase or decrease of the complaint. When the attack is very violent, the drink may be made stronger; and a clyster will produce salutary effects. Gruel and rice water, will be found better to allay the thirst in this disorder than cold water.

DYSENTERY

This disease, though often considered in the same light as diarrhœa, is generally of a more fatal nature, from being accompanied with fever; and not unfrequently of inflammation of the mucous lining of the intestines.

Causes.—When it has originated in diarrhœa, improper purges of a drastic nature and acrid substances may cause it; defective perspiration, and checking the same too suddenly; unhealthy localities, and unwholesome herbage.

Symptoms.—An immoderate discharge of dung, accompanied with a thick and purulent slime. As the disease progresses, blood is passed; the inflammation increases, and the intestines become ulcerated; the mouth gets dry, and the thirst intense. When the extremities get cold, and an involuntary evacuation commences, the result may be regarded as fatal.

Treatment.—Medicines of an invigorating nature will be used with advantage. When inflammation is excessive, you may bleed; and a mustard poultice applied to the bowels may give relief.

Castor Oil - - - -	6 ounces.
Ipecacuanha - - - -	1 drachm.
Opium - - - -	3 scruples.
Rice Water - - - -	half a pint.

This administered every eight hours for two or three successive times, in some cases will produce a cure. Blaine recommends calomel and opium, to be given liberally. Green herbage has been tried with effect; when convalescent, the animal should not be exposed, as the disorder might return.

STRANGLES.

This disease is so called from the difficulty horses affected with it have in breathing; it affects, generally,

the mucous membrane, which lies in the upper part of the throat, the windpipe and the bronchial tubes, sometimes extending to the lungs, and these are always more or less inflamed. There are two kinds of Strangles, denominated true and false: in the first, the general appearance is much more healthy than in the latter, and does not so frequently degenerate into Glanders. The healthy, or true strangles, through maltreatment, often becomes in time converted into the false; but this last species never assumes the form of the first

Causes.—Authors on this subject differ materially. Impurities in the body, imbibed from eating pernicious food—change of diet—cold, are generally assumed as the causes; while some assert, that from its affecting colts and young horses it may be considered as constitutional; for when once attacked, (and horses are generally afflicted with it when young,) they are not subjected to it a second time. The disease oftentimes produces very little interruption to the health, especially when the weather is fine; although, in other cases, the horse has been reduced to a state of complete emaciation, and thus has frequently terminated in Glanders. M. Rodet, of the Royal Alfort Veterinary College, wrote on this subject very ably. In the Farriers' and Naturalists' Journal for July, 1828, appeared the following translation of a part of that work:—

"According to a popular author, the Strangles consists in a poison of an uncertain quality which circulates in the blood, until nature makes an effort to throw it off, and it settles on a part, which is usually the nose or under jaw

"If the poison be not expelled, that is, if the horse

does not have the Strangles, he is generally considered in great danger; and this opinion is even maintained by many persons in the profession.

"M. Rodet, dissatisfied with this vague account, has made experiments which throw great light upon the subject, and has proved the absurdity of the vulgar opinion. He considers the Strangles as an inflammation of the throat, which differs in no respect from many other affections of those parts known under different names.

"This author, who admits nothing which experience has not sanctioned, meets the advocates of the innate causes of Strangles with the following fact, which refutes them completely:—

"The horses of warm countries, such as Arabia, the coast of Africa, Spain, and even Italy, never have Strangles, a disease known only in the middle and northern parts of Europe. Now have we not a right to ask, by what privilege the horses of the South are preserved from Strangles, if this affection were solely to be attributed to the existence of a particular poison? And also, why Barbary horses (we cite them as an example), are less sickly and more vigorous than those of our own country, as they do not go through that purification, that cleansing, which is here considered so indispensable to the health of our horses?

"The inflammation called Strangles, cannot be attributed to an innate poison which circulates in the blood from the birth of the animal; and it is not the effect of any single cause; it is referable, according to M. Rodet—

"1. To the disturbance of the second dentition, which takes place between the age of three and five, and is sufficiently painful to cause an increased action, more or less, of all the neighbouring parts

" 2. To the castration of males.

" 3. To the changes in diet and situation which young horses undergo.

" 4. To the unusual fatigue which they undergo in training: all circumstances which happen about that period, and which add more or less to the activity of the first and principal cause.

" The fact before mentioned on the subject of Southern horses, still comes in support of this opinion: they are free from the Strangles when not castrated, and left in their native country: but they lose this advantage if they are castrated and taken young into cold and humid climates; where we find them placed under the influence of the above causes. They do not carry with them the germ of the complaint, but they acquire it in the country to which they are taken.

" The errors in the treatment of Strangles have chiefly attracted the attention of M. Rodet. In consequence of the opinion that the Strangles being a poison generated with the animal is an indispensable complaint—a crisis which is necessary to take place—it is generally believed that we ought to assist it as much as possible; above all, to be careful of checking it by bleeding; which, however, is the best means of cure.

" It is a great satisfaction to many people when a horse with the Strangles has discharged well; it is a guarantee for his future health; the more goes out, the less remains, they think. This reasoning, which appears singular to physiologists, is, however, without any exaggeration that of many persons who are not devoid of knowledge; but who, upon this particular subject, reason wrongly. Every day we hear amateurs and officers of cavalry complaining to dealers that

they stop the Strangles on their horses by bleeding them when it shows itself, and attribute all the complaint which may afterwards occur to the Strangles repelled or badly thrown out.

" M. Rodet has not admitted any of these evidently erroneous opinions ; he treats the Strangles by the antiphlogistic plan, in which bleeding is a principal agent, by powerful counter-irritation, (setons, blisters, &c.). The success which he has met with in this rational plan has been very great, as may be seen in his essay, which contains the history of twenty-two cases treated on this plan, twenty of which were successful ; to the other two he was called too late, and in them he remarked a complication of symptoms. The author inquires, upon what this generally-received opinion is founded—that stopping the Strangles, and the non-expulsion of the supposed virus, can have injurious effects ? He observes, that dealers who have horses on the point of showing the Strangles, disperse the first symptoms of it by repeated bleedings, which check the inflammation ; but they do not follow up the bleeding by any additional means to render its effect durable ; and besides, they continue to keep the animals under the influence of the causes which first produced it. It results, that inflammation, imperfectly treated, recurs again after a time and gives rise to diseases of more or less importance, which ought to be attributed to this bad treatment, and not to the bleeding, which is good, and the most useful remedy in our power.

" M. Rodet concludes, from the observations in this essay—

" 1. That the Strangles, far from being an affection *sui generis*, is truly an inflammation of the mucous membrane of the mouth, nostrils, larynx, trachea, &c ; it may extend, by continuity or sympathy, to the tissues

which that membrane invests to the glands, the lungs, and even to the stomach.

" 2. That bleeding, aided by other antiphlogistic means, to which is joined the use of the most active counter-irritants, constitutes the proper treatment of Strangles.

" 3. That bleeding, employed without the auxiliaries in question, may certainly have the bad consequences which have been attributed to it by ignorant people."

Respecting some of the opinions here stated, many practitioners agree, others again differ; especially in the doctrine of copious and frequent bleeding.

The true Strangles generally occur where the animals are well fed, in a good condition, and when they are consequently healthier and stronger, than in those cases when they are ill-conditioned, badly kept and fed, much exposed to wet and cold, all of which are the incentives to the other form of the disease, called false or bastard strangles, which species, not unfrequently, will terminate in Glanders or Farcy.

Symptoms.—The eyes appear dull and languid; a cough and soreness of the throat, accompanied with a slight fever. The throat between the broadest part of the two lower jaws become swelled, especially the glands: occasionally, an abscess is found in those parts. The pulse is quicker than usual; after the disease has continued a few days, a discharge from the nostrils, and sometimes from the mouth, succeeds, when he animal requires the greatest care.

Treatment.—When the true form of the disease appears, which, as I have said before, oftener occurs in well-conditioned horses, the system may be very properly reduced by bleeding, but not to prevent suppu-

ration. In the other form, the animal wants something to restore a debilitated system; and, consequently, he ought to have such things as improve the condition rather than weaken it. Care should be taken to keep them warm. Poultices were once in very common use, to mature the tumour; from the thickness of the horse's skin, these effected little, and they are now not so general. A blister will hasten the progress of the tumours, and consequently ease the animal of pain sooner than allowing a head to form naturally; when a thick, whiter, and more healthy pus is discharged from the swelling when the part is open, it should be carefully washed, and a little Friar's Balsam applied to the sore will be efficacious. Blaine says, that he has used the following ointment, and found it very excellent in " stimulating to the formation of pus"—

" Venice Turpentine, and Blistering Ointment, of each an equal quantity."

As the disease progresses toward a cure, a mild dose of medicine may be properly used. The appetite will be found to increase as the abscess begins to heal: when these are obstinate, and the nasal discharge continues, tonics must be administered, and great care taken to feed and clothe properly, as then is the time to apprehend its termination in Glanders. Horses are not subject to the Strangles more than once, although cases do occur in which the milder form attacks them. This disease appears to be the same with the *vives* of the old farriers, which term they likewise employed to denominate all disease which they referred as originating in the same.

BROKEN WIND.

This is a subject that has long employed veterinary practitioners most of whom differ as to its origin. Our continental neighbours, as well as ourselves, have arrived at no satisfactory conclusion respecting it. To show the variety of opinions entertained on Broken Wind, we need only to hear what Blaine says on their numberless conjectures. "It has been attributed to external and internal causes; to a defect, and to a superabundance, of vital energy; to altered structure of the heart, of the lungs, of the diaphragm, the stomach, the liver, &c.; it is lesion with some, nervous with others, and simple distention with a third. Gibson attributed it to an enlargement of the pulmonary mass generally: Dr. Lower to a rupture of the phrenic nerve; and in later times, it has been mostly attributed by our writers to organic lesion."

Causes.—With so many different opinions on the subject, we must doubtless look for a variety of causes assigned, as well as numberless methods of treatment, although none have ever obtained celebrity or emolument by establishing a cure for the Broken Wind. I shall endeavour to give the most popular and approved accounts of each. Broken Wind may arise from the formation of the body; especially, as we may very often discover it in the inferior breed of horses, where the narrow and confined chest will not admit of a well regulated action of the lungs, and further, from the distended bellies usually seen in gross feeders, and likewise in mares, among which it more frequently occurs than with the horse. Ravenous feeding, from keeping the animal too long without his meals, giving him too much

dry food, as straw, chaff, bran, &c.; sometimes it succeeds chronic cough, or any of those disorders affecting a proper respiration. These are what have been termed the remote causes, although the more immediate ones have not been satisfactorily defined.

Symptoms.—Few things are so clearly marked in the disorders to which the horse is subject, than the symptoms of broken wind, which is known by the alteration in his breathing. The cough has more the character of a grunt; the inhalation of breath is generally easy and uniform, while the exhalations are produced laboriously, and oftentimes with pain; when the flanks become distended beyond the ordinary size and then relax into their natural position.

Treatment.—Vain, at present, have proved all attempts to accomplish a cure, although something may be done towards giving relief, by care and skilful management. The food should be of a moist nature, and not overabundant; quality being better than quantity. Turnips, (Swedes,) and the mangel wurzel, will be serviceable, from their being easy of digestion, and they remain no length of time in the stomach. When the symptoms are high, bleeding is sometimes found efficacious. A mild aperient, occasionally administered, will be advantageous: antimony and nitre has been used frequently.

Mr. Lawrence makes the following remarks on this disorder.—"Broken Wind seldom comes on suddenly, but is generally preceded by habitual coughs and colds; and these causes are considerably aggravated by overfeeding and want of sufficient exercise. In regard to coughs, there is this perceptible difference between those which are recent and inflammatory, and those

which are chronic, or of long standing. In the first, there is generally some discharge from the lungs, but in the latter, there is seldom any discharge whatever.

" As the horse does not expectorate through the mouth, the mucous is coughed up into the nose, from whence it is afterwards discharged by the action of sneezing. But in the old or dry cough, as there is no mucous coughed up, so the horse does not sneeze after coughing; and much reliance is placed on this circumstance by dealers in forming their opinion as to the state of a horse's lungs.

" It is therefore their custom to pinch the upper part of the trachea or windpipe, to force the horse to cough, so as to enable them to ascertain whether he is sound in his wind; and although this is by no means an infallible criterion, still there is a very manifest difference between the cough of a sound horse and one that is broken-winded; inasmuch as the one is clear, full, and sonorous, whilst the latter is short, and generally attended with a wheezing noise, and mostly accompanied by a discharge of wind from the fundament, in consequence of the sudden contraction of the abdominal muscles in the effort to expel the air from the lungs. Many curious tricks are said to be practised by the lower class of horse-dealers, such as giving the animal a large quantity of oil, and sometimes a quantity of leaden shot, both equally ridiculous and unavailing; but the most absurd practice of all, is the custom of making an artificial and additional opening to the anus, with a view of more easily letting out the wind with which horses in this state are particularly troubled. This flatulency or collection of air in the intestines, has no connexion whatever with the cavities of the chest; and the only inconvenience which it occasions,

arises from its distending the belly, and consequently impeding, in some degree, the action of the lungs. It is produced entirely from that indigestion which always accompanies, more or less, a diseased state of the lungs; for as a free and perfect respiration is essential to the general health and vigour of animal bodies, so the want of it must naturally impair the action of the stomach, and produce the inconvenience above-mentioned."

The system of cutting the anus, cannot be too greatly exclaimed against; it is now going fast into disuse. Horses afflicted with this disease ought to have a moderate degree of exercise every day when not in ordinary employment. Drink ought to be administered in small quantities and often, and be but seldom given while in draught.

ROARING.

This is chiefly to be detected when the horse is put into a brisk trot or gallop, especially up hill, when a strange kind of grunt will issue from the throat if subject to it. Striking the animal suddenly will produce the same sound: it is not very perceptible when in gentle exercise.

Causes.—Inflammation in the tracheal tube; a band of lymph running across the larynx and windpipe, and thus obstructing his power of breathing freely. It is sometimes the effect of strangles and cold.

Treatment.—When active inflammation produces it,

bleeding and blistering will give relief. Some use setons to the throat. Mr. Youatt says, "A more frequent and previously unsuspected cause of roaring, is the habit of tight reining. There can be no doubt that many more carriage-horses become *roarers* than those that are used for the saddle alone; and the explanation of this at once presents itself in the continued and painful pressure on these parts, caused by reining in the carriage-horse and teaching him to bear himself well. We have seen the larynx and that portion of the windpipe immediately beneath it, flattened and bent, and twisted in the strangest way, which could not have been produced by disease, but by mechanical injury alone. The mischief is usually done with young horses. The arched neck and elevated head of the carriage-horse is an unnatural position, from which the animal most habituated to it is eager to be relieved."

The same author states that this disease may be generated in the young colt.

CRIB-BITING.

This generally originates in a want of proper powers of digestion; it comes under the denomination of a vice: this is improper, as undoubtedly it can be traced to bad feeding, which soon begets indigestion. Its name is derived from the habit horses afflicted thus have of *biting their stall*, at the same time accompanied with a convulsed motion of the windpipe, as if *suck the wind*, which it is erroneously called at times. The habit of buckling straps tightly round the neck in this disease, and thus compressing the larynx, is very apt

to give the animal Roaring. The collar invented by Mr. Yare, will prevent Crib-biting, and may be used with greater safety. Animals afflicted with this disorder are seldom fleshy, and once acquired, is not easily got rid of, even when the cause is removed.

LOCKED JAW,

So called from the rigid closure of the mouth, is one of the most terrible and fatal diseases to which the horse is subject. It is evidently an affection of the nervous system, very slow and treacherous in its attack, as sometimes the attack does not come on till the wound, whence it generally originates, is nearly healed.

Causes.—A wound in the foot, when the nail has been driven into the quick in shoeing, will produce this disease. Nicking, docking, and castration, when unskilfully performed, are all incentives to it. Exposure to excessive cold, lacerations and contusions, have brought it on. Gibson has traced its origin to worms; and more particularly to the erosion of bots on the villous portion of the stomach.

Symptoms.—A slight fever is generally the forerunner of this disease; and as it advances, the muscles of the trunk and extremities are drawn up. The head is raised, and appears fixed; the ears are stuck forward; the nostrils unnaturally expanded; the eye drawn into the socket; and the neck is stiff. The legs are straddled, and the tail cocked and quivering; and

sometimes inordinate sweating accompanies the exertions of the convulsion with which it is attended. After remaining some days in this state, the animal if not speedily cured, which is but seldom the case, dies of exhaustion and pain.

Treatment.—Although many never think it worth while to attempt a cure unless the horse be very valuable, yet, as Mr. Blaine very justly observes, "Although the greater number of instances prove fatal, yet still a sufficient number recover to warrant our utmost endeavours; and the more so, as most of those who do survive, appear to do so from the beneficial effect of the treatment adopted. The very different means which have been successfully tried might stagger the sceptic, and make him attribute the recoveries under these discordant medical agencies to constitutional strength; but there is no reason whatever for such a conclusion. This is not the only instance by many, wherein very opposite means are beneficially employed for the cure of the same disease in different subjects. Every practitioner is aware of the benefit derived from cold applications in some inflammatory cases; and every one is equally aware how salutary hot fomentations prove, apparently, in similar inflammations in other subjects. A curative end is equally produced by both: the *modus operandi* to us is not evident. This circumstance should make the veterinary practitioner not absolutely wed himself to one plan of treatment universally. When any such has been pursued without appearance of success, let another be adopted."

A skilful veterinarian in Newcastle-upon-Tyne, Mr. Wilkinson, has published an account of some remarkable cases of this disease in which he wrought several

cures: the work is interesting, and well worthy of serious attention; especially as very slight causes will bring on an attack of this often very fatal complaint.

As horses are generally very costive, the following purgative drench is recommended:—

Barbadoes Aloes	8 drachms,
Soap	4 drachms,
Ginger	3 drachms,
Oil of Anniseed	30 drops,
Treacle	2 ounces,

mixed after this manner—having beat together the aloes, soap, and ginger, and formed them into an electuary with the treacle and oil of anniseed, add to the whole a pint of warm water. This he considers sufficient for any moderate-sized horse.

A clyster is to be thrown up at the same time, composed of

Olive Oil	8 ounces.
Water Gruel (warm)	2 quarts.

The diet during this period is to consist of bran-mashes; oatmeal-gruel mixed with milk, or some sweet green clover, may be allowed, if the jaws will admit of it.

The muscles of the head, jaws, neck, and back, must be rubbed with this liniment:—

Oil of Turpentine	4 drachms,
Liquid Ammonia	4 drachms.
Mustard	2 ounces.
Olive Oil	2 quarts.

Two or three sheep-skins just stripped from the animals while it is yet warm, must then be thrown over the body of the horse; this, by increasing perspiration, quickly relaxes the muscles.

If nicking be the cause, cut the sections still deeper, and stimulate the wounded parts actively. When

docking produces the disease, let the operation be performed again a degree higher; and if the foot be wounded apply the hot iron or caustic. In treating the constitutional disease, the greatest relief has often accrued from exposure to severe cold, as leaving the animal in cold water for half an hour, and repeating the same every two hours. The application of ice has greatly mitigated the severity of the symptoms; add to this the letting of blood, is much approved of. Sometimes as much as eight and ten quarts have been taken from a full, plethoric horse; and among the medicines used to purge the bowels, the croton next ranks first as being very active, and contained in the smallest compass: one drachm for the first dose, and eight or ten grains repeated every five or six hours till it produces effect. Blistering the spine bone is also deemed expedient. Clysters are also used to make the purgation more speedy. If drinks are administered, great patience should be exercised, as raising the animal's head puts it to excessive pain. Should the horse recover, nourishing food, not too freely administered, ought to be given; and doubtless, he has experienced excessive hunger during the continuance of the Locked Jaw. All remedies should be very speedy, and in some cases, violent; as to trifle with the disease must end in the death of the animal. Opium is usually given to allay the irritation attendant on bleeding and blistering. If the disease is far advanced, administer it in gruel as an injection; the bowels must be kept relaxed through all its stages.

JAUNDICE

Is known among farriers as "the Yellows," and is generally caused by the stoppage of the passage which conveys the bile from the liver to the intestines. The symptoms are usually irregular appetite, a languid appearance, with yellowness around the eyes and mouth. The urine is highly coloured, and the dung comes away in hard balls.

Treatment.—The first thing is to gently open the bowels; to which end give

Aloes - - - - -	2 drachms,
Calomel - - - -	1 drachm,
Gentian - - - -	2 drachms,

made into a ball, and administered twice a-day till they produce effect. In some cases bleeding is necessary: a change of food is required in all cases of Jaundice; carrots in winter, and grass in summer, will be found beneficial. If the disease commences with diarrhœa, it should be stopped, as it may generate inflammation. Gibson asserts that this disease is sometimes epidemic. Some practitioners object to bleeding in Jaundice, generally, as it increases the debility which is consequent on the disease. It is seldom dangerous, and in young horses is sometimes brought on by good feeding and too little exercise, when it is very easily cured. In old horses the cure is often effected.

DIABETES, OR PROFUSE STALING,

Generally arises from some pernicious quality of the food; but may be traced to other causes, as irritation

of the kidnies, disorganisation of the digestive powers, &c. However, it is not of very frequent occurrence, and when it does appear, is sometimes very dangerous. The food is the first thing to be looked to, and then bleed and purge according to the symptoms; then have recourse to astringents, as catechu, uva ursi, opium, &c. If the digestive organs be much deranged, and the appetite bad, give

Sulphuretted Potash - -	2 drachms.
Uva Ursi, (powdered) - -	4 drachms.
Catechu - - - -	2 drachms.
Opium - - - -	2 scruples.

This may be mixed in an infusion of camomile, and used once a day.

BLOODY URINE,

Otherwise distinguished by farriers as "*pissing of blood,*" is sometimes brought on by violent exertion and severe riding. Occasionally it proceeds from inflammation of the kidnies, and must be treated accordingly.

Treatment.—Rest is essentially necessary. Mild astringents, as alum, catechu, logwood, &c., may be used—but diuretics must be avoided. Sometimes it has been requisite to resort to a strengthening plaister across the loins.

WORMS

Are very general among horses, but seldom do hurt, except where they are found in great numbers. There are several descriptions of these animals found in the intestines of the horse, but the most common is the bot, on which Mr. Bracy Clark has taken some pains to treat and illustrate; some assert they are perfectly harmless, and do not interfere with the general health of the animal: others differ in opinion; and Gibson says, "The bots that many horses are troubled with are found sticking to the rectum, and are often thrust out with the dung, along with a yellowish coloured matter like melted sulphur.

"They are apt to make a horse restless and uneasy, and to rub his breech against a post. The season of their appearing is usually in the months of May or June; after which they are seldom to be seen, or rarely continue in any one horse above a fortnight or three weeks. Those that take possession of the membraneous part of the stomach are more irritating and dangerous in causing convulsions, and are seldom discovered by any previous signs before they bring a horse into violent agony." There are beside these the lubricus teres, not unlike the common earth-worm. The tœnia, or tape-worm, is seldom found among horses; the whip-worm likewise rare; and the ascarides, or thread-worm, which sometimes exist in large numbers, and are very hurtful.

Symptoms.—An irregularity of appetite as well as of the bowels, and sometimes a dry yellow matter is found under the tail. When the teres abound, the skin generally sympathises with the bowels, the coat stares

and feels rough; occasional gripes, and a bad breath, is not uncommon.

Treatment.—It is very difficult to remove worms from the stomach. Oil of turpentine acts as a vermifuge, as does also cevadilla, or Indian caustic barley. The use of salt with the food is said to be particularly obnoxious to these animals. Calomel is sometimes used to expel them, but the practice is dangerous in the extreme. Tartar emetic and ginger, given in a ball every morning before feeding, will be effective. An injection of linseed-oil used when the ascarides is very troublesome, will oftentimes destroy their pernicious effects. Strong purgatives of all descriptions are beneficial when the horse is afflicted with worms, as numbers are thus brought away.

Gibson strongly recommends calomel and aloe purgatives before the hot weather comes on, and care be taken with the diet afterwards; it is doubtful if they will prevail during that season.

On the first day administer

Calomel - - - - 1 drachm,
Anniseed (powdered), - - 4 drachms,

made into a ball with treacle or honey; the second day let

Soccotrine Aloes - - - 8 drachms,
Ginger - - - - 2 drachms,

be mixed into a ball, and these may be repeated at intervals of nine days, until the horse has had three or four doses.

Sulphur given in doses of an ounce every night and morning will destroy the quantity of ascarides which are found occasionally in the horse's stomach. Emetic tartar is a good remedy, and may be used with advantage. Mr. Clark gives the following account of the

death of a horse which was very much afflicted with the bots; and which he supposes were gradually producing mortification from their number. He likewise asserts, that the horse was very fat, and exhibited no outward symptoms of morbid affection. "On visiting a horse that had been ill for some days," says he, "I found the servant giving a drink when I entered the stable, which I was afterwards informed was composed of an infusion of linseed, in which was dissolved an ounce of nitre, with some honey to sweeten it, and into the last hornful was poured from a small phial about half an ounce of spirit of hartshorn.

The horse seemed very uneasy after the drink; he was soon seized with a violent trembling and shaking; a profuse sweat broke out all over his body, and ran down his sides, at the same time his legs and ears were quite cold; he laid down, seemingly in great agony, and was soon convulsed all over, and died in about half an hour after the drink was swallowed. On inspecting the stomach the coats were found to be greatly inflamed. A mortification had taken place on one side, where it appeared of a darker colour like that of the liver; at the same time it was considerably distended and full of food. On turning it inside out, an incredible number of bots were found all round the sides and lower parts, as close to each other as they could possibly be; and such firm hold had they of the stomach, that in endeavouring to pull some of them off when alive they broke in two, and their heads remained sticking behind

RABIES, OR MADNESS.

In the horse this disease is always *acquired* from the bite of some rabid or mad animal, most generally of a dog. When the saliva is once inoculated, the safest method is to cut the part out with some sharp instrument if practicable; lunar caustic *(nitrate of silver)*, may be carefully applied to those parts where it would be dangerous to use the knife; no antidote has yet been discovered capable of destroying effectually the possibility of any future attack; although the use of the box tree has been recommended by some as deserving a further trial. It is administered as follows:—
Box Leaves, (or a part of the tree scraped) half a pound.
Rue - - - - - - - half a pound.
When chopped very fine, boil thin in three pints of milk for an hour, then strain them; boil the ingredients once more in a quart of water for the same period; when strained, mix the two liquids. Divide this into three potions, and give one every morning fasting.

In cases where the hot iron has been used, the effects have not altogether answered the expectations, as the animal has sometimes died, while caustic may be applied and severely, without much danger.

When the saliva has remained in the horse, the time varies from three or four to eight weeks before he shows any rabid symptoms: but the attack invariably comes on quicker when the bite or inoculation has taken place in the head. When first seized, the animal trembles and staggers, occasionally pawing the ground, and staring vacantly around; before many hours are over, he is generally quite frantic, plunging and kicking most violently, foaming at the mouth, snorting and

sweating. If you intend to administer medicine at the first symptoms of the malady, the greatest care should be taken; lest the horse scratch you with his teeth, as several have lost their lives through it: a thick leather glove might not be inaptly used. The safest way is always to destroy the animal when the disease begins to make very rapid progress.

BITES AND STINGS FROM VENEMOUS REPTILES.

The adder is the only reptile of the serpent tribe known in England; these will occasionally, though very rarely, inflict their venom on the horse, and fatal consequences have sometimes resulted through neglect. The most certain cure will be to give immediately

Spirit of Hartshorn - -	6 drachms.
Salad Oil - - - -	1 pint.

The same may be likewise applied outwardly to the place bitten. The stings of hornets, wasps, and bees, are of minor consequence, and may be speedily cured by rubbing them with a little common blue indigo made into a paste with a little water

CONSUMPTION,

Is a disease found among horses sometimes, although by no means so general as among mankind: it is ge-

nerally fatal, and takes its origin at times from an inflammatory state of the lungs, when they have in a great measure become tuberculated; occasionally it is constitutional, and hence a primary affection.

Symptoms.—A modern writer, in speaking of this disease, says, " When a consumption arises from any defect in the lungs, or principal viscera, the eyes look dull and a little moist, and the ears and feet are generally hot. There is mostly a dry husky cough, and a groaning when turned suddenly in a stall; the horse sneezes much when brought into the cold air, and shows uneasiness, and a quick motion in his flanks, discharges occasionally at the nose, and generally a yellowish curdled matter. His breath also smells more or less offensive when the disease has made much progress or been of long continuance.

" They eat but little at a time, and chew their hay very lightly and deliberately, and very often throw the cud out of their mouths after chewing it.

" In general they are hide-bound, and their coats are long, dry and staring, even in summer. These symptoms disappear upon being turned to grass in warm weather, owing to the richness and succulence of the herbage; but they soon return when in the stable and again put to work.

" When a horse that has any of the above symptoms retains a tolerable appetite, and keeps up his spirits in a certain degree, without losing his flesh, it is a sign that the disease has not taken a very deep root; but on the contrary, when he continues to lose flesh and strength, it is a pretty certain indication of inward decay beyond the power of medicine to prevent. When there is a yellowish curdled matter discharged from the nostrils, it may generally be consi-

nered as the last stage; but if the matter be white and well digested, and occasionally decreases in quantity, or changes to a clear water, it is a promising sign, especially if the horse be young. But even under these circumstances, the pre-disposition to disease may still exist, and the smallest irregularity, either in diet, clothing, or exercise, may bring on a return of the complaint.

"Some young horses continue in this consumptive state for several months; and through the effects of great care and nursing, give at some intervals a prospect of recovery, but, nevertheless, die ultimately exhausted by disease. Some go off in a much shorter time, although they are not apparently so much debilitated; and some recover after a discharge from the nostrils, even of two or three year's standing: but in this last case, the discharge has been suspended at intervals, and the mucous was always white; and when it ceased at any time, it was generally succeeded by a simple discharge of clear lymph or water.

"Such horses will retain their appetite and not lose their flesh, and will go through their work tolerably well with good usage; though, if they are hurried a little more than ordinary, they will be the worse for it; and those to whose lot such horses have fallen, must have observed, that they seldom recover perfectly, or remain long well, until they are seven or eight years old, when their complaints frequently go off, and they become healthy and useful animals."

Little alteration of the pulse is noticeable in the first stage of the disease; but as the constitution begins to decline, so does the pulse quicken and become smaller and considerably hurried during the periods when the animal is put to any exertion.

Causes.—There are many things which tend to bring on this complaint; as before stated, an inflammatory state of the lungs, or the consequent to other debilitating diseases, as farcy, or glanders, &c. Horses whose temperament is hot and fiery are most apt to take on these symptoms; they are generally weak, and from their nature and disposition, through over-exertion, soon exhaust themselves.

Cures are by no means certain and efficacious in any stage of this disease: when inflammation is attendant on consumption, as is generally the case, blood may be very properly taken. After this, the bowels should be looked to. After administering bran-mashes a day or so, the following ball may be given:—

Barbadoes Aloes - - -	5 drachms,
Emetic Tartar - - -	1 drachm,
Castile Soap - - -	4 drachms,

made up with a sufficient quantity of treacle or honey.

The mash may be continued till the purge has taken effect; after which we must have recourse to diaphoretics, to loosen the skin and promote perspiration:—

Assafœtida - - - -	1 drachm,
Emetic Tartar - - -	1 drachm,
Ginger - - - -	1 drachm,

mixed with liquorice-powder and syrup of buckthorn, into a ball, and administered every other night; and occasionally omitted for a few times.

Great advantage will be derived from succulent food during the period of administering this latter course of medicine. In summer green food is easily procured; but carrots will answer the purpose in winter.

Gentle exercise should be resorted to, and the air must be as pure and fresh as possible.

The quantity of food should be but little at a time, and given often; the stomach does not become overloaded by this means.

The following ball is used by some instead of the last, and is found efficacious:—

Emetic Tartar - - -	1½ drachms,
Opium - - - -	1½ scruples,
Camphor - - - -	1 drachm,
Ginger - - - -	2 drachms,
Oil of Carraway - - -	12 drops,

made into a ball with treacle or honey.

FALLING OF THE PENIS

Occurs sometimes with such draught-horses as may have been over-worked, and occasionally with a stallion which has been allowed to cover too much in a season; the muscles become relaxed, and consequently are unable to perform their functions, or to support the penis in a natural position.

Cure.—When the falling first commences, return the penis into the sheath, and bathe with cold water several times during a day; after which smear the parts with a liniment of hog's lard and turpentine, in the following proportions—to one part of the latter add four parts of the former. This must be melted over a slow fire.

When general weakness accompanies the falling, tonics and cordials are resorted to; and sometimes it will be found necessary to bolster up the penis, and apply a charge over the hinder part of the sheath, leaving enough room to allow the horse to pass his water.

FALLING OF THE FUNDAMENT,

Sometimes comes on horses recently docked; at other times it is the effect of continued relaxation of the bowels; occasionally it proceeds from over-exertion.

Cure.—Wash the gut with a solution of alum; after which, bind a piece of linen round your two fingers, and having greased it, thrust the protruding gut into the anus. A small quantity of the solution may be occasionally injected.

If the gut is inflamed, a cooling liniment should be used.

In obstinate cases it has been found necessary to cut off or burn with the cautery the protruding gut: in this case, quietness and rest is very necessary. A run at grass for a week or two will be advantageous.

This complaint, however, but seldom appears, except with horses of a washy and weakly constitution: and even with this, if taken in time, a cure is not difficult.

FISTULA IN THE WITHERS.

This is a disease brought on the horse by the saddle pressing too much on the withers, and little or no notice being taken of it the first day or so, the part becomes inflamed and sorely affected; and though at first small, begins to spread on either side.

Cure.—In slight cases apply a poultice, in order to

bring the part affected to a head, and to promote the formation of matter; then pass a seton from the top to the bottom of the tumour, on both sides if necessary. When the case has passed into the fistulous symptoms, the greatest of care is required, for fistulas when neglected or badly treated, soon change into obstinate ulcers. Caustic applications will be called into use in these stages of the disease, which will be most efficacious in destroying the malignity of the case and restoring the parts affected to a healthy state.

The following may be applied :—

Corrosive Sublimate - -	2 drachms.
Spirit of Wine - - -	5 ounces.

This lotion will soon begin to show its effects, and in a few days the surface will put on a better aspect, when it will be necessary to keep the part clean, and doubtless the whole will be healed shortly after; but the saddle should not be used too soon, as the skin being thin, the former symptoms might return. In very obstinate cases the treatment may be undertaken similar to that mentioned under the " Pole Evil."

POLE EVIL

Takes its name from its situation on the pole of the head, and commences in inflammation, gradually resolving itself into an abscess or ulcer, when it becomes most troublesome to cure.

It is more frequently found with large draught or farm-horses; the hair at the roots of the mane causing irritation, they are apt to rub their heads against the stall, sometimes rather violently; hence, in time, an

abscess is formed, more particularly when there is an inclination towards mange. Blows of all description on the head, however obtained, will bring on Pole Evil; but none so soon as those administered by a set of brutal unfeeling carters, who, instead of assisting a horse, and endeavouring to make him understand what is required, take the butt-end of their stick or whip, and, to the injury of the animal, strike it most severely over the head. Some assert that this disease sometimes proceeds from a peculiar habit of body; but the generality of practitioners are against this assertion. As soon as discovered, the attempt to cure should not be delayed, since the disease spreads with great rapidity. The occipital and parietal bones have not unfrequently been affected with it; and it has been known to penetrate the parotid gland. Its worst symptoms are present when it attacks the articular ligaments, and pours the malignant discharge into the spinal canal, which then brings on paralysis.

Treatment.—When the inflammation is first perceived, and is found to be but slight, it has sometimes yielded to the following application:—

Sal Ammoniac - - -	4 ounces,
Sugar of Lead - - -	1½ ounces,
Vinegar - - - -	1 pint,

mixed.

This lotion should be applied by means of a cloth large enough to draw over the ears, two holes having been cut in it for that purpose. By these means, the rag will adhere closely to the pole, and it should be kept constantly wet with the lotion.

When the inflammation is great, it will be necessary to try the effects of a blister, and then apply the above

lotion. Meanwhile let a gentle purge be administered every third or fourth day.

If the inflammation approaches the ligamewtary connexions underneath, astringent and tonic applications must be resorted to:—

Cantharides - - - -	2 ounces,
Spirits of Wine - - -	$2\frac{1}{2}$ ounces,
Vinegar - - - -	6 ounces,

mixed, and put into a bottle, with a few shakings in the mean time will be ready for use in ten days. This may then be rubbed twice a day on the parts affected; terebinthinated tincture of cantharides will answer the same purpose.

These failing, and an abscess being inevitable, the first care must be to encourage and hasten the maturation, which may be effected by means of poultices, and when the swelling has ripened a speedy evacuation of the contents is necessary; this may be procured by the introduction of a seton, running the needle into the uppermost end of the tumour and bringing it out at the lowest extremity, that the humour may flow with ease. By these means, Pole Evil, in its earliest stage, may be often effectually cured.

When the abscess has been neglected, and the case proves obstinate, it then assumes a more formidable aspect; the ulcer deepens and spreads, and eroding the ligaments of the joints of the neck. We must resort to painful operations to produce a healthy action, and an eventual filling up of the diseased parts; for when the thin ichorous discharge follows the healthy secretion, sinuses begin to form in all directions, which terminate in caries of the bones of the neck.

If neglected when in this state, or badly treated, the horse is apt to acquire a stiffness in the neck, and a

thrusting out of his head and nose in a very awkward and ugly position.

The scalpel is now called into action; and having cast the horse, as the safest method of proceeding to work, examine most carefully every part; to effect which the lateral opening must be enlarged, and if caries of the bones have taken place, they must be scraped or taken out, as found necessary. All hard edges must be taken away, and the small sinuses opened, to prevent new tumours forming. These operations should, however, be performed by skilful surgeons, for common farriers may do considerable mischief. Active escharotics must be used in most cases of obstinate Pole Evil; the following are recommended:—

Lunar Caustic - - -	2 drachms.
Water - - - -	3 ounces.

Or,

Corrosive Sublimate - -	2 drachms.
Water - - - -	2½ ounces.

Inject either of these into the sinuses. In mild cases the terebinthinated tincture of cantharides has answered well in procuring a healthy action.

In extreme cases, however humanity may recoil from the practice of cruelty and rail at the operations of those of the old school, yet there are many cases which even at this day require us to resort eventually to their systems. The method of *scalding* is the last resort as a cure to the ravages of the Pole Evil; and perhaps, indeed, painful as this may be at the time, it is often preferable to the frequent use of active escharotics, or the eventual use of the pole axe.

Take—

Arsenic, (powdered finely) -	2 drachms.
Basilicon - - - -	4 ounces.

Or,

Corrosive Sublimate - -	2 drachms.
Basilicon - - - -	5 ounces.

Or,

Buttyr of Antimony - -	4 drachms.
Oil of Turpentine - -	$2\frac{1}{2}$ ounces.

Melt any of these in a ladle of iron, and when hot pour the liquid into the cavity, and after a few days dress the wound with mild ointment; if the first application does not answer, scald again.

COUGHS, AND CHRONIC COUGHS.

The action of coughing arises from a sudden and violent effort of the abdominal muscles, together with those of the ribs and the diaphragm, uniting for the intent of forcibly ejecting any substance or fluid which may have gathered in the air-passages, and which, passing from the larynx down the trachea, would irritate the lungs and obstruct the respiration.

There are many diseases, such as glanders, broken-wind, consumption, &c., to which a cough is generally allied, but in any of the cases the removal of the original complaint is the best means of subduing any affection of the air-passages. A chronic cough, however, will sometimes exist apart from all other disease, when the horse will eat well, and even look in good condition, showing its symptoms more frequently in the morning and evening, and generally after drinking; and thus it has been known harmlessly to exist during the whole term of the animal's life; while, sometimes, it has proved exceedingly hurtful.

Causes.—When not dependant on any particular dis-

ease, it can, most generally, be traced to sudden changes in the weather and temperature, or great exposure to cold or rain.

Treatment.—In many slight cases of cough, unattended with any symptoms of fever, a warm stable and clothing sufficient to make the animal perspire freely will give relief. If there be any discharge of mucus, let it be encouraged, in order to ease the lungs. For this purpose the following ball will be essential:—

Liquorice Powder	3 drachms,
Sulphur	1 drachm,
Assafœtida	2 drachms,
Venice Turpentine	2 drachms,

mixed.

This may be administered every other night for a week, at the same time feeding on bran-mashes or carrots; the exercise during this period should be very gentle, and the animal kept tolerably warm. Cordial balls will be occasionally efficacious, and can be given on the intervening nights:—

Liquorice Powder	4 ounces,
Spanish Liquorice	4 ounces,
Anniseed, Bruised	4 ounces,
Anisated Balsam of Sulphur	3 ounces,
Carraway Seeds	2 ounces,
Ginger	5 drachms,
Oil of Anniseed	5 drachms,

mixed with honey, and divided into a dozen balls.

To those who prefer giving draughts, the following will answer the same purpose:—

Carraway Seeds, (powdered)	1 ounce.
Anniseed, (powdered)	1 ounce.
Grains of Paradise	6 drachms.

Balsam of Sulphur - - - 2 ounces.
Aromatic Confection - - 4 drachms.

This can be given in warm gruel every alternate day instead of the cordial ball.

The above recipes are solely for such horses as are altogether free from any symptoms of any other disease; consequently it will be important to mark well the horse's general habit and appearance, and note whether the cough arises from any irregularity of the system.

If the cough proceeds from a bad habit of the body, a course of purges will be necessary, when the following may be given :—

Barbadoes Aloes - - - 8 drachms,
Castile Soap - - - 3 drachms,
Ginger - - - - 2 drachms,

mixed with a little honey.

In some cases it will be necessary to excite the mucus secretion, as the want of it will greatly irritate the parts affected, when this ball may be given :—

Calomel - - - - 1 scruple,
Balsam of Peru - - - 2 drachms,
Gun Ammoniac - - - 1 drachm,
Squill, (powdered) - - - 1 drachm,

mixed with honey, and given in the morning before feeding.

When there is too great an abundance of the mucus,

Lime Water - - - - half a pint,
Tar Water - - - - half a pint,
Squill, (powdered) - - - 1½ drachms,

will give relief.

When the cough is accompanied by fever, it may in many cases be requisite to bleed, especially if the horse is plethoric; the feeding should then be more moderate, and gentle exercise will be necessary.

At all times the greatest advantage has been derived from feeding on turnips, carrots, parsnips, or potatoes.

Blistering is efficacious oftentimes when there is much irritation around the larynx; and being applied to the throat, it stimulates the surface, and thus the windpipe is considerably relieved.

Horses subject to coughs should be exposed as little as possible to the inclemencies of the weather, or any sudden change in the temperature.

Some have tried camphor in cases of chronic cough with great success:—

Camphor - - - -	2 drachms,
Ipecacuhana, (powdered) -	1 drachm,
Liquorice, (powdered) - -	4 drachms.

mixed with honey, and given as a ball in the morning, may be tried efficaciously.

An old author gives the following recipe:—

Anniseed, (powdered) - -	6 ounces.
Castile Soap - - - -	6 ounces.
Liquorice Powder - - -	6 ounces.
Barbadoes Tar - - -	6 ounces.
Gum Ammoniac - - -	2 ounces.
Balsam of Tolu - - -	1 ounce.

This is mixed wih honey sufficient to make a consistency, and then divided into twelve balls, and given every other night. Many speak in high terms of this.

Chronic cough, if not carefully attended to, will often degenerate into *broken-wind.*

SANDCRACK,

Is a term applied to a division which is sometimes found in the hoof of the horse, in a direction parallel to its growth, viz., from the coronet downward; and seldom extends more than half way down the wall; it exists, but very rarely, in an horizontal position. In some cases it is brought on by external injury to the hoof; at others it arises from a brittle state of the horny fibres of the foot. The fore-feet are much more subject to Sandcracks than the hinder ones; and if the fissure is permitted to increase after once being observed, lameness to a considerable extent may occur, and not easily cured.

Mr. Blaine says, "Whatever injures the vascular coronary origin of the hoof, as treads, cuts, or other lesions of the coronet, may also produce Sandcrack. The fissure is not always of a determined depth, being sometimes so superficial as not to penetrate the whole thickness of the horn and occasioning no inconvenience at first. At others, it exactly extends through the horn, but does not divide any of the sensible parts underneath; while sometimes again a lesion of some of these takes place: neglect, and a continuance of work will, however, commonly bring any case, from the slightest into the most aggravated state. When the hoof is completely penetrated, it becomes a most painful affection, and productive of extreme lameness; for the divided edges of the horn are apt, during exercise, to admit the protrusion of the soft parts underneath, which becoming suddenly pressed on by the approximation of the horny edges, exquisite momentary pain is produced. From the injury done to the sensible laminated expansion, there is often a

sprouting of fungus between the divided edges, which greatly aggravates the symptoms.

" Accidents of all kinds injuring the vascular origin of the hoof around the coronet, may occasion Sandcrack also, as treads, stubs," &c.

The *Treatment* must at all times depend on the state of the complaint. Nevertheless, all cracks should be paired down to ascertain their depth. When it proceeds from brittleness of the hoof, or is but slight, a coat of tar will strengthen the foot; a piece of tape must then be bound over it, and a second coat applied. Some prefer firing when it extends low down the foot. A blister on the coronet will also be serviceable.

When the crack penetrates the crust, and causes lameness, the greatest care is requisite to prevent any serious consequence; and when the hoof has been divided near the coronet it will not heal under six months; before which time it would be imprudent to use the horse even for common ordinary work; it will be beneficial to make use of the bar shoe for some time during the period the crack is closing.

QUITTOR,

Or ulcer in the coronet of the foot, oftentimes has the same origin as the Sandcrack, and occasionally the one arises from the other; and the cure can only be effected by thoroughly cleaning the ulcer, for which purpose the severest measures are frequently indispensable.

Caustic applications are the best remedies, and

indeed the only things likely to produce a healthy action of the ulcerated surfaces.

Mr. Lawrence recommends that we should "take a small piece of thin India paper, spread over with some butter or lard, then sprinkle about ten grains of corrosive sublimate, finely powdered, over the surface of the paper and roll it up into as thin a roll as possible, and introduce it into the Quittor as far as it will go.

"The horse's head should be tied up for a few hours to prevent him from rubbing it with his mouth, and the tent should be left within the ulcer for three or four days, at the expiration of which time it may be taken out and the diseased part will follow it; after which it becomes a simple wound, and requires nothing more than to be kept clean and defended from the air by a bandage around it."

As in Sandcrack, the horse requires great rest during the progress of this disease; indeed, much danger is attendant on allowing the animal to work at such a time. A perfect knowledge of the anatomy of the foot is requisite in this case as in most diseases connected with the legs and feet of a horse.

CANKER.

There are several opinions entertained respecting this harassing and tedious disease; some practitioners asserting it is constitutional, others again considering it essentially local. Be this as it may, certain it is, we often find it the sequent to some other disease of the foot, especially *grease*, *quittor*, and *thrush*. Not unfrequently, however, it originates from carelessness

in the shoeing, and is easier prevented than cured. It belongs, more generally, to the class of heavy draught-horses than to the lighter breed. It consists of a fungous matter, spread by degrees between the horny and sensible parts of the foot, inoculating everything within its reach, and, when far advanced, totally separates the hoof from the frog and sole, a part or the whole which has been found to be diseased.

Treatment.—The knife as well as caustic and cautery are often required in this case. After cutting away every portion of the hoof that is dissevered from the sensible portion beneath, chloride of antimony must then be applied as a dressing daily, but at the same time very slightly; great care should be taken also to preserve the feet as dry as possible; and exercise is essential, but not such as would expose him to hurt the diseased foot.

As the cure advances, administer a few gentle purgatives, and feed on bran-mashes.

THRUSH,

Is a discharge of matter through the cleft of the frog and heels, arising from acrid moisture, such as dung or urine, penetrating the horny hoof, and thus irritating the sensitive portion of the foot, produces an unhealthy action, whence fissures are formed, and an offensive fluid escapes. Thus it is more frequent in the hinder than in the fore-feet; and horses of every description are liable to be attacked if not properly cared for. It also proceeds from contraction. If not attended to in

time, it is with difficulty removed sometimes it can never be perfectly eradicated; and no error can be so gross as to suppose that such a running is at times beneficial to the health of the horse.

If the animal be young or plethoric, a few doses of physic may be advantageous. With older horses a course of diuretics will suit better.

To stop the running, after washing the parts carefully, apply :—

Common Ægyptiacum - -	2 ounces,
Oil of Turpentine - -	1 ounce,

mixed.

If this fail, try the following, which must be introduced on a pledget of tow, but as gently as possible :—

Blue Vitriol, (powdered) - -	2 ounces,
White Vitriol, (powdered) -	1 ounce,
Tar - - - - -	1 pound,
Lard - - - - -	2 pounds,

well mixed into an ointment.

During the progress towards a cure, each day the rough edges should be either removed or softened by bathing in warm water.

INFLAMMATION OF THE LUNGS

Used to be but little understood by the farriers of the old school, and it has been reserved for modern science and practice to develope such treatment as will tend to work a cure for this disease among horses that would, not very long since, have been inevitably doomed to the dog-kennel.

Causes.—Nothing so readily brings on this disease

as any sudden transition from heat to cold, and even in some cases, though not to so fearful an extent, a sudden removal from a cold to a heated atmosphere; exposure to a current of air when in a state of perspiration; applying cold water to the body and legs while the animal is hot; all these will produce inflammation of the lungs.

Mr. Youatt, in his work entitled "the Horse," says, "He who would have his stud free from disease, and especially disease of the lungs, must pursue two objects, coolness and cleanliness. In the gentleman's stable, the first of these is studiously avoided, from the prejudice or the idleness of the groom, and from these stables proceed most of the cases of inflamed lungs; especially when this heat is combined with that temporary but mischievous nuisance, the repeated breathing of the same air during the night, and that air vitiated by the fumes of the dung and urine. In the stables of the post-master, where not only closeness and heat, but the filth that would not be in a gentleman's establishment, are found both inflammation of the lungs and glanders prevail; and in the stables of many agriculturists, cool enough from the poverty or the carelessness of the owner, but choked with filth, inflammation of the lungs is seldom seen; but mange, glanders, and farcy abound."

Whatever may be the cause of this disease, it is very certain that its effects are most rapid, and its duration most uncertain; this arises from the lungs being more vascular than any other parts, and as they are enclosed in a case of very circumscribed dimensions, the swelling which is attendant on inflammation taking place in this confined space, the air-cells become nearly closed, which may also account for the difficulty of breathing which accompanies this complaint.

Symptoms.—Its approach is testified by the most deceitful and treacherous symptoms; and those well versed in the veterinary science, have at first mistaken it for catarrh in some animals and colic in others. The coat stares; the extremities are colder than usual; and as the disease progresses, a great difficulty in breathing exists; there is but little appetite for food; the horse looks very dull and heavy; and shortly the pulse becomes irregular and very indistinct. The disease, thus beginning, mortification soon takes place; the legs and ears become perfectly cold; the breathing becomes more and more difficult; the flanks heave rapidly; the teeth grind; and after ineffectual efforts to stand, the animal falls to rise no more. If the disease has worked this change in a few hours, the post-mortem appearances exhibit every symptom of suffocation; the lungs are filled with black blood, and many suppose from the colour and apparent rottenness in this case, that the disease has been contracted some considerable time; but we may rest assured that this state has arisen solely from an inflammation most intense in its nature, and rapid in its progress.

Treatment.—The horse, on the first attack, must be bled; five quarts will in most cases be sufficient; but if the animal be plethoric, and exhibit great difficulty in breathing, six or seven quarts may be taken. The bowels must then be attended to: after back-raking, a clyster composed of six ounces of Epsom salts dissolved in thin warm gruel, must be administered; this must be repeated every fourth or fifth hour till it produces the desired effect. Purges are very far from useful in this disease; indeed oftentimes being rather hurtful than otherwise.

If the first bleeding has not been successful in allay-

ing inflammation, the fleam or lancet will be called into action a second, and even a third time; although the second generally suffices. An interval of six hours must be allowed to observe the benefit derived from each operation.

We must now use means to prevent the return of the inflammation. Some prefer rowels, but a blister is far the best. After shaving the hair off the chest and sides, below and behind the elbow, and between the fore-legs, apply the following blister ointment:—

Spanish Flies, (powdered)	2 ounces,
Resin	2 ounces,
Lard	8 ounces,

mixed

This must be well rubbed in.

The clyster having performed its office, this sedative may be used to diminish the irritability of the system.

Emetic Tartar	1½ drachms,
Digitalis	1 drachm,
Nitre	3 drachms,

mixed.

This is used twice a day, but must not be continued for any length of time.

Forty-eight hours generally decides the fate of the horse. If the blister or rowel does not take effect, the worst consequences may be apprehended; and when the breath stinks, and the discharge from the nose becomes offensive, dissolution is nigh.

The blister must be repeated; if the state of the animal will allow it, bleed again, and a little tonic medicine may be tried.

Great benefit will accrue by rubbing the horse with the hand and using flannel bandages to the legs.

A cold mash, green food, and hay, may be given

during these processes; and as a restoration to health advances, corn and hot mashes must be carefully avoided.

The internal medicine used by many consists of—

Cape Aloes - - -	1 drachm,
Digitalis - - - -	1 drachm,
Nitre - - - -	3 drachms,

mixed into a ball with honey or treacle, and given every five or six hours: and to aid the cough—

Liquorice Powder - -	2 drachms,

is sometimes added.

As the horse gains strength he may be exercised daily, but not allowed to be fatigued, or to be exposed to cold: green food is always recommendable in inflammation of the lungs.

In some few slight cases, where mortification does not appear to exist, and nature struggles to resist the effects of the disease; if bleeding has not been resorted to, and the quantity of mucus discharged from the nostrils is great; and when the legs and lower portions of the chest swell, the undernamed diuretic ball is given to carry off the water which abounds:—

Liquorice, (powdered) - -	4 drachms,
Assafœtida - - - -	2 drachms,
Venice Turpentine - -	4 drachms,

mixed into a ball.

This can be given every twenty-four hours, cleansing the nostrils frequently during the day, as also the rack and manger.

PLEURISY,

Is not very dissimilar from the last disease in cause, symptoms, and cure; this being inflammation of the

pleura or membrane which covers the lungs and lines the chest and not affecting the substance of the lungs themselves. The great distinction is, that in pleurisy the pulse is not oppressed, but rather hard and full, and the membrane of the nose not so intensely red as in inflammation of the lungs. At first he strives to lay down, but soon starts up again; and if not speedily relieved soon expires.

Bleeding, blisters, and sedative medicines, must be used as in the last disease; puncturing the chest seldom produces any good effects, and consequently must not be relied on. Purgatives may be used in pleurisy.

"As pleuritic disorders," says Mr. Gibson, "are more apt to leave some taint on the lungs than common colds or other inflammatory disorders, a great deal of care must be taken upon his recovery that his feeding be proper, and in right quantity, and his exercise well-timed. A horse should be kept to a light open diet for a fortnight or three weeks, viz., a quartern of bran scalded every day; and besides that two or three small feeds of the cleanest and sweetest oats sprinkled with water.

"Instead of the scalded bran, it will be well to give him sometimes for a change, about a quart of barley scalded in a double infusion of hot water, that it may be softened, and the water may be given him to drink.

"His exercise should be gradual, and increased as he gathers strength, and always in an open free air when the weather is favourable. If there be any remains of a cough, the air, with moderate exercise, will tend greatly to remove it, and the remedies usually given in chronic affections of the chest resorted to. Purging is also proper after pleuritic diseases, but the purges should be very gentle.

"The following proportion will generally suffice:—

Barbadoes Aloes - - - 6 drachms,
Castile Soap - - - 4 drachms,
Ginger - - - - 4 drachms,
mixed with syrup of buckthorn into a ball.

" This may be given with the usual preparations necessary in purging, and will operate well without occasioning either sickness or griping.

" This ball may be repeated at the intervals of a week, provided the horse does not appear weak after the first dose."

It sometimes happens that pleurisy and inflammation of the lungs are combined.

There exists another difference, not yet mentioned, by which pleurisy may be distinguished from inflammation of the lungs. In the first, the flanks are very restless, and the belly greatly tucked up ; in the latter, the heaving of the flanks is regular, and the belly has a full appearance.

SWELLING OF THE BREAST,

Or, as it is sometimes named, " Anticor," from its position before the heart, is not so common with us as among the horses of our continental neighbours. Hard riding is said to produce it, together with a sudden stoppage of perspiration, allowing the horse to drink cold water when in a heated state, and, lastly, an excess of food without sufficient exercise.

Symptoms.—Its name indicates one of its principal symptoms, namely, Swelling of the Breast, which is accompanied by stiffness in the neck, and this to such

an extent that sometimes the animal cannot touch the ground with his mouth; great trembling, and occasional hanging back when at exercise, and a general dullness and drooping. When the swelling reaches as high as the throat, symptoms of suffocation are apparent.

Bleeding, and the use of clysters, are highly necessary in the first stage of this complaint; a purge may then be given—

Barbadoes Aloes - - -	8 drachms,
Castile Soap - - -	2 drachms,
Ginger - - - -	1 drachm,

mixed into a ball. This is given with bran-mashes and lukewarm-water.

Emetic Tartar - - -	2 drachms,
Venice Turpentine - -	4 drachms,

mixed with liquorice-powder, to give it consistency, into a ball. This must be given after the purge has had sufficient effect, and may be renewed every two days. At the same time a fomentation of bran and water as hot as the hand will allow will give great relief, and this may take place every two or three hours.

In cases where the swelling yields to the pressure of the finger, and that impression lingers, or when it is not speedily reduced, it may be dropsical, and will degenerate into water-farcy. The fleam is then useful, and must be struck in several different parts at the lower end of the swelling, and the discharge from these punctures must be encouraged by warm fomentations.

If pus or matter has formed after lancing the part and squeezing the abscess, apply a pledget of tow dipped in common digestive ointment of yellow basilicon; this must be thrust into the wound, and changed every day till symptoms of healing takes place: if the

edges of the wound bear an unhealthy appearance, a little burnt alum must be used.

When the disease has increased with great rapidity, and extended under the belly, bleeding is necessary, and then proceed as before directed.

GREASE

is an inflammation of the lower extremity of the legs, and is generally found in the hollow or the back part of the fetlock-joint; sometimes of the fore, but oftener of the hind-feet.

It generally arises from bad stable-management, and though not contagious, will on that account often go through the stable where it has once commenced. The farmer's horse is much less exposed to the attack of this disease than are any others; this arises from his living much more in the open air, and feeling less the sudden and extreme changes of temperature.

The skin of the heel differs considerably from that in other parts; the fetlock is subject to very great motion, consequently the skin is very soft and elastic, and has a greasy feel. When inflammation takes place here, the heels become dry and scurfy, owing to a secretion of the greasy matter; *cracks* are first formed, and from the incessant motion to which the fetlock is subjected, the heel soon takes on an ulcerated appearance, and discharges an oily fluid of an offensive nature similar to that in canker and thrush, and that is termed grease.

Causes.—All horses disposed to have swelled legs

are liable to grease. Cart-horses, and the heavy draught horse with round fleshy legs are very subject to it. One very great cause is the negligence of grooms, who do not pay proper attention to the feet when they clean the horse, but leave the heels wet and full of sand. A general debility is a fertile source for this disease; and at the spring and fall of the year, when the horse requires more care than at any other time, from want of proper treatment, regular exercise, and a little cleanliness, grease will speedily appear, and from neglect become very virulent. Another frequent cause is the aptitude some have for cutting off the hair close to the horse's heels, on which Mr. Lawrence observes—

" It is a general, but a very erroneous opinion, that the hair harbours dirt, and consequently promotes the disorder: but the contrary is the fact. From the hair being longer at the heels than at any other part of the leg, it is clear that nature had some particular reason for that difference, and that reason is, on a moment's consideration, self-obvious; namely, for the defence of a part which is more exposed to friction than the rest of the limb. This hair, by lying close to the skin, shields it from the action of the dirt, which, when the heels are trimmed close, always insinuates itself, and by rubbing the skin, irritates it and inflames it to a considerable degree; for when the hair is cut close, that which is left does not lie smooth, but stands out end-ways like a brush, and thus easily admits mud and clay, and every other kind of dirt. The skin secretes a natural oily fluid for the purpose of keeping it soft and flexible; but when it is thus exposed by trimming off the hair, this fluid is rubbed off by friction, and the skin, becoming yard and dry, soon cracks, and the *grease* ensues.

"That hair is a protection to the heels, may be easily ascertained by laying aside and examining the surface of the skin, which in that case will be found clean and dry, even after travelling the whole of the day through the dirtiest roads. The thorough-bred horse, it is true, has but little hair on his heels; but it should be remembered that he is originally a native of a hot climate, where the soil is light and sandy, and free from moisture.

"Horse-dealers know so well the utility of leaving hair on the heels of horses that work hard, that they never trim their own hackneys which they ride to fairs; and coach-masters and inn-keepers would find it beneficial to adopt the same plan."

It is necessary, however, in this case, to use the brush to or hand-rub the heels, using little or no water. The horses used for riding or driving are now entirely stripped of the hair about the heels; fashion has ordained it so; and, indeed, the improved state of our modern roads and streets render such a defence unnecessary. The brush will easily remove all the dirt that usually gathers, and if the heels must be washed, the groom is not generally so over-burdened with work to prevent him spending a few extra moments drying and hand-rubbing these parts, as the water left there is one sure method of bringing on *grease*.

Symptoms.—When this disease first appears, the skin of the heel is very dry, and there is much scurf about the hair; this is accompanied with redness and heat, which produces considerable irritation and itchiness. If allowed to increase, the part becomes ulcerated, and a discharge takes place: when the cellular membrane under the skin is inflamed through it, considerable lameness and pain ensues. In some cases the

horse is unable to lie down, which heightens the swelling and irritability of the disease.

Treatment—When *swelled legs* first appear, great relief will arise, and consequent danger removed, by hand-rubbing the legs for half an hour or an hour morning and evening, and afterwards applying a bandage, and occasionally giving a dose of physic. In the spring and fall, a diuretic mixed with a cordial will be of service, this will circulate the blood and invigorate the frame, especially during the period the horse is taking on a new coat. If the animal has suffered from starvation, make use of a mild diuretic and tonic. But in most other cases, regular exercise and the bandage are the best medicines. If necessity has compelled the horse to be left in the stable some days, and he is subject to swelled legs, a mild dose of physic will be serviceable; but the constant and indiscriminate use of diuretics is very much to be reprehended.

When the symptoms of Grease first appears, wash the heels with soap and water, and having removed all the scurf you possibly can, dry the part, and rub in the following ointment :—

Sugar of Lead - - - 2 drachms,
Lard - - - - - 2 ounces,

mixed.

In case where cracks are just beginning to show themselves—

Blue Vitriol - - - - 2½ drachms,
Water - - - - 1 pint,

mixed, will serve as a good solution in drying them up.

When the case has not been discovered early, and the discharge has commenced, a poultice of boiled bran and linseed, powdered, must be used, and a diuretic given; but when the matter has become offensive,

a little charcoal must be added to the above poultice Some persons make use of a carrot-poultice, and indeed speak very much in favour of its efficacy; it deserves a trial.

As inflammation and the pain and soreness decreases, wash with—

Sulphuric Acid - - -	1 drachm,
Alum, (powdered) - -	1 ounce,
Water - - - - -	1 pint,

mixed.

Some, after fomenting with warm water, apply—

Golard's Extract - - -	1 drachm,
White Vitriol - - -	1 drachm,
Water - - - -	1 quart,

mixed.

A diuretic every second or third day may be used, but a mild purge will be the best:—

Barbadoes Aloes - - -	8 drachms,
Ginger - - - -	1 drachm,

made into a ball with syrup or treacle, and given with the usual preparation of bran mashes.

If the disease is obstinate, the following ointment may be tried:

Red Precipitate - - -	4 drachms,
Yellow Rosin - - -	4 ounces,
Olive Oil - - - -	4 drachms,

mixed.

Mr. White recommends in obstinate cases a mercurial alterative—

Calomel - - -	half a drachm,
Aloes - - - -	1 drachm,
Castile Soap - -	2 drachms,
Oil of Juniper - -	30 drops,

made into a ball with syrup. This he gave every morning.

It is essentially necessary to keep a horse as clean as possible, and exercise him on clean and dry ground; during the progress of the disease a moderate allowance of corn may be given, especially when debility exists; green meat and carrots are very serviceable. When thoroughly cured, a run at grass is recommended. If the horse's legs are usually disposed to swell, a bandage should be used for some time after the cure has been effected, indeed, in such cases, it is often very necessary, and will often serve as a preventative.

Sometimes cracks will show in the heel, and the usual swelling and discharge of matter may not exist; some use then the following ointment:—

Hog's Lard - - - -	4 ounces.
Palm Oil - - - -	2 ounces.
Olive Oil - - -	1 ounce.

This is to be put in a pot of boiling water and left till it melts, when

Acetated Litharge - - $1\frac{1}{2}$ ounces,

must be stirred into the mixture.

This is applied morning and evening, and must be well rubbed in.

In severe cases, the mel ægyptiacum is used by some, as is also a poultice composed of oatmeal and beer-grounds.

When the horse has been lame during the progress of the disease, the exercise should be very gentle at first, and as a cure advances by degrees a trot may be ventured on. But all may rely upon the opinion of practitioners, that the origin of the disease is *bad stable-management.*

DISEASES OF THE EYE

Are several; but the most common is inflammation of the conjunctiva, or membrane which lines the eyelids, covering the cornea and haw of the eye.

When the attack is but slight, a cooling application will often remove it. The following embrocation is used:—

Goulard's Extract - - - 1 drachm,
Spring Water - - - 1 pint,

mixed. Or,

Laudanum - - - 3 drachms,
Spring Water - - - 1 pint,

mixed.

Either of these may possibly be effective; at the same time administering a mild purge:—

Barbadoes Aloes - - - 5 drachms,

after the usual preparation of bran-mash.

Regard must, however, be paid to the symptoms and general appearance of the eye: if the disease proceeds from a blow, or is produced by any foreign body, try

Sulphate of Zinc - - - 1 ounce.
Spring Water - - - 1½ pints.

This will remove the inflammation; but if it still lingers, and the horse shows great reluctance to stand in the light, it is to be feared that the most destructive of all diseases to which the eye is subjected is present. This is known, as the

Specific Opthalmia;

Or, as it was formerly called, Moon-blindness: it ge-

nerally comes on during the night, and does not attack horses that have been free from it when between four and six years old; but having had it during that period, they are liable at all ages afterwards to be affected. At first, the cornea becomes clouded, and the aqueous humour loses its transparency; the iris in many cases is discoloured, and the inflammation is by no means stationary, but first attacks one eye, then the other; the whole surface soon assumes a bloody appearance, the pupil contracts, and finally total blindness is the result. Sometimes one eye is lost, and sometimes both.

The disease at all times is most uncertain; for several weeks all inflammation will disappear, and then it will as suddenly return

Causes.—It is usually attributed to a baneful atmosphere, the neglect of cleaning and purifying properly the stables, and at the same time keeping them too close and void of proper ventilation; another cause is keeping the stall too dark, the horse becomes dazzled, and it is some time before he obtains his vision when brought from a dark stable into the light. Purging will also bring it on: and it must here be noticed, that once attacked, the horse propagates it; if perfect in every other respect, blindness, in consequence of Specific Opthalmia, will give the young weak eyes, which may eventually turn to total obstruction of light. This is a fact well known, but not been properly heeded.

Treatment.—According to the strength of the animal, bleeding will relieve this disease, but by no means cure it. Try any of the lotions named before, or apply poultices, with a small quantity of either Goulard's extract or opium mixed in them: bleeding from the

angular vein at the inner corner of the eye is a practice some employ. Scarifying the eyelid may be performed; setons are placed in the cheek. Some resort to the following remedies:—

Blue Pill - - - -	12 drachms.
Opium - - - -	2 drachms.
Linseed Meal - - -	1 ounce.

This is made into a mass with soap, and then divided into six balls, one of which is to be given every second morning, fasting.

Or,

Sulphate of Copper - -	12 drachms.

Or,

Sulphate of Iron - -	12 drachms.

Take which is preferred or easiest of access, and mix the quantity with linseed meal and soap, and use one ball every day.

Use whatever is direct, or recommended by any practitioner. "One thing is certain," as a modern author expresses it, "the disease ebbs and flows, retreats and attacks, until it reaches its natural termination, blindness of one or both eyes." This, however, is only in reference to the true and severe attack of that dreadful inflammation, Specific Opthalmia.

Mr. Coleman says, this disease of the eye of the horse is an inflammation of a specific nature, totally differing from any that occurs in any other animal. One of the reasons why it is supposed to affect the constitution is, that horses afflicted with this inflammation of the eye, are either totally free from perspiration, or they sweat profusely, indicating a slow fever.

Cataract,

Is generally the sequent to Specific Opthalmia; and it were needless to prescribe any cure when such a termination has ensued. Many of the ablest practitioners have tried operation after operation in this case but without effect. The Royal Veterinary College has laboured most studiously with the same result.

Simple cataract, as in the human being, does not exist in the horse; the retractor-muscle draws the eye very deeply into the socket, and with such force, that an operation cannot be performed: and indeed if it were possible to remove the opaque lens, the sight in such a case would still be very partially obstructed; and it is a well-known fact, that an imperfect vision is useless, and often detrimental to the horse.

Gutta Serena,

Is another species of blindness to which the horse is subject, and is likewise known as the *Glass Eye;* which name it takes from appearance, being bright and fixed, with the pupil more than usually dilated. It appears to be paralysis of the optic nerve. It is as incurable as cataract. Blistering, bleeding, physicing, and the application of rowels, have been tried in vain. It is ascribed to various causes, as staggers, termination of blood to the head, and affection of the brain.

Sometimes the haw thickens and projects on the fore-part of the eye; cooling lotions, with bleeding and physicing, will disperse all danger. This important organ should never be cut out, as some of the old farriers were accustomed to recommend.

It is a general notion that when vision has been lost to one eye the other is strengthened accordingly; on this, Mr. Percivall in his lectures observes:

"The loss of one eye does not enfeeble sight, because the other acquires greater energy, though it much contracts the field of vision. It is said to render the conception erring, and the case of mis-judgment of distances is the one commonly brought forward to show this. All I can say on this point is, that the best hunter I ever possessed, a horse gifted with extraordinary powers for leaping, was a one-eyed horse, and this animal carried me through a hunting season without, to my recollection, making one single blunder in leaping."

CONTRACTION OF THE FOOT,

Is a disease very general among horses, and more particularly contraction of the heel, when lameness almost invariably is the consequence; and if it has existed for any considerable time, a perfect cure cannot be wrought. It always comes on gradually, and therefore should be checked in the very commencement.

Causes.—There are many circumstances which accelerate this disease. Among the primary ones, we must attribute it to the strength and thickness of the wall of the hoof. Want of moisture—bad shoeing—internal disease, and consequent alteration of the structure of the foot, will produce contraction. *Neglect of paring the sole and lowering the heels,* are especial causes.

Treatment.—When the disease first shows itself, turn the horse out to grass, after removing the shoes; in many instances this will prove successful. When lameness to any extent exists, it is hopeless to attempt a perfect cure. Innumerable have been the methods of treatment, some of which have given temporary relief, while others have produced a worse lameness, where considerable expense has been lavished. Physic, local-bleeding, paring the sole and rasping the quarters, and sometimes scoring the toe, have all been tried; the application of wet cloths, &c. Add to all these a continued rest for five or six months, and oftentimes longer. After these means have been used, though in some cases better, in many the heels have been as bad as ever.

Prevention is better than a cure, and by care and attention the disease can generally be obviated by keeping the feet properly moist, and with care in the shoeing.

Many mechanical contrivances have been hit upon in hopes of working a cure in cases of contraction, but none have answered the desired end.

At times this disease is accompanied with what are denominated *Corns.*

CORNS.

Differ materially from those to which the human being is subject; they are soft and spongy, and have a red appearance; they make the foot very tender, and will not admit of any pressure.

They must be cut out with a very sharp knife, and

if the matter or fluid be great, apply the butter of antimony. Bar-shoes may be put on. They seldom attack the hind-feet.

Unshod colts are usually perfectly free from this and the last-named disease.

THE POMIED SOLE, OR FOOT,

Is the reverse of contraction, and is the result generally of acute inflammation. The quarter may be rasped down, and the toe cut as short as convenient, and the horse may then be turned to grass. Temporary relief may generally be obtained, but a perfect cure can never be effected. Nothing should ever be allowed to press on the pomied portion of the foot. If six months at grass produce no effect, it may be set down as incurable. When the disease has advanced for any length of time the horse becomes useless.

OF WOUNDS.

All parts of the horse are liable at some time or other to wounds; consequently their treatment must greatly depend on their nature and external appearance, for they must vary in a great measure according to the instrument that inflicts the injury, its situation, and extent. Some are easily healed, others are tedious, and at times dangerous; but on no subject in the veterinary science does there exist so much difference of opinion as on treatment of wounds.

When the flesh is injured alone, search the wound, and ascertain whether any splinters, thorns, or other extraneous substances remain behind; if so, remove them with the probe or any other convenient instrument, and then, according to the size of the incision, apply slips of sticking-plaster to keep the edges of the wound as close as possible, or sew it together with a needle and thread, and after placing a bandage round the part, foment it with bran and water, this will allay the inflammation, and is infinitely better than the use of caustics, and by no means so painful. If any noxious substance is left in the wound, mortification will often ensue after the foregoing treatment; but when nothing remains behind, and the part becomes unhealthy and begins to form matter, the wound must be treated as an ulcer

If the blood-vessel is injured use a ligature, which is a better method of securing it than resorting to any styptic application.

Wounds in the joints and nerves are very difficult to treat. Of the first, mention has been made in a former part of the work. When the nerve is affected, locked-jaw will often ensue. Wounds in the spinal marrow, when that portion situated above the branch of the nerves which lead to the heart and lungs, produce death. When a tendon is injured, foment with bran and water in preference to any spirituous application. Nothing can be so absurd or dangerous as a practice very much in use among farriers as the introduction of tow, which has been saturated in some powerful oil, into wounds, the irritation is hereby considerably increased rather than diminished; furthermore, the mouth of the wound is kept open, and a blemish will often be perceptible, especially after a healthy wound has been by such a process converted

into a callous ulcer, when the utility of caustic and stimulating applications have been called into action.

When wounds of the tendons heal slowly, the edges may be touched with butter of antimony; a piece of tow smeared with digestive ointment must then be superadded, and a bandage to keep it close to the part affected.

In case where the wounds in the joints prove obstinate, the tow must be dipped in the following lotion :—

Golard's Extract - - 1 drachm,

Vinegar - - - - two-thirds of a pint, mixed; put this into a quart bottle, and add about a pint of water.

When proud-flesh is attached to any wounds dress them with a little red precipitate mixed with the ointment in general use.

A modern author says, " The benefit of healing wounds by the first intention is particularly manifest in cases of overreaches on the heels of the fore-feet from the shoes of the hind-feet. For in these cases nothing more is necessary than to wash the part thoroughly with warm water, so as to remove all sand or dirt whatever, and then to keep the divided parts together by a bandage, and not to remove it for three or four days at least. The coagulated lymph will then be thrown out from the mouths of the vessels, and the surfaces will be found glued, and this constitutes what is called—healing by the first intention; and this process may generally be adopted with success where the wound is of a simple nature.

In compound wounds, where the bone has been injured as well as the muscular parts, it is more difficult, and sometimes impossible, to heal by the first intention; first, because the consequent inflammation is more violent, and, secondly, because the fractured

parts of the bone become, when detached, extraneous substances, and must be brought away before the wound can thoroughly heal. Hence it sometimes happens that the surface of the wound heals whilst the bottom or internal parts are unsound, owing to the circumstance of the bone not having exfoliated, and the irritation being still kept up, a fresh degree of inflammation ensues, and the wound suppurates and breaks out again.

" In this case, (and in this only), the mouth of the wound may be kept open by the introduction of tents; and if the abscess has not a sound, healthy appearance, such caustic applications may be used as will destroy the diseased surface and produce a healthy action in the part, which is always manifested by red granulations, and the secretion of pure white matter of a proper consistency.

" It is necessary to observe that probing wounds should never be carried to excess, indeed it should be avoided as much as possible; and at all times the finger is the best instrument to be used for that purpose.

" The mouth is subject to ulcers from many causes, as the use of a rusty bit, decayed or broken teeth, &c. Apply—

Alum - - - - - 4 drachms,
Water - - - - 1 pint,

mixed. Or—

Tincture of Myrrh - - 1 ounce,
Water - - - - 1 ounce,

mixed.

" Either of these will dissipate the ulcerous appearance.

" A little internal cooling medicine is necessary if inflammation accompanies ulcer in the mouth.

OPERATIONS.

THERE are many operations to which the horse is subjected from necessity, as in cases of disease, mortification, or other affections; these may be ranked as follows:—

Bleeding,—Blistering,—Cropping,—Firing,—and the application of Rowels and Setons. But there are other operations which modern taste and fashion have deemed necessary for his beauty, and these are *Docking* and *Nicking*. To these we must add the custom of *Castrating* or *Gelding*.

As some of these operations are liable to give the animal excessive pain, it is necessary that he should be bound or confined in such a manner that the persons around can act without fear of injury, and the horse may not be damaged or rendered less valuable by any mischief or hurt to which he might be subjected by any struggles during the operation.

When a horse is to be thrown and confined, the term applied is *casting*, which is thus performed.—Having prepared a thick bed of straw about eight or ten feet square, the *hobbles* are fixed on each foot, and the cord which passes through the ring of each strap to the foot is then pulled; this draws the legs close together, and a man being stationed at the head, and another at the haunch, the horse is gradually brought to the ground on whichever side is wished. It is however necessary to remark that no great violence should be used in pulling the rope, for if the shock be too sudden, notwithstanding the thickness or quantity of the litter, the fall may cause some accident. The head should be held as soon as the horse is down, and the eyes ought to be covered, at the same time the cord

must be well secured to prevent any struggling. Any operation can now be performed.

The *twitch* is a noose formed by passing a cord through a hole at the end of a strong stick and then knotting it; this is put on the muzzle of the horse, and twisted. The pain thus caused renders him tolerably quiet during any ordinary operation; each turn of the stick adds or diminishes the pain at the option of the person holding it.

The *trevis* is not so frequently used as formerly: it was more usually found in forges, and is a certain appendage to them on the continent.

The *side-line* is used to prevent kicking, and is generally resorted to when the twitch has proved insufficiently secure.

Bleeding

Is an operation generally performed on the jugular-vein with either fleam or lancet, the first instrument being the most common as well as the safest, especially in the hands of such as are unacquainted with surgical implements. Much danger often results from the improper and unskilful use of both fleam and lancet, which subjects the jugular-vein to many tedious diseases; while on the other hand, where there is real necessity for the operation of bleeding, it is of the greatest benefit and importance to the horse.

Mr. Clarke of Edinburgh has some very excellent and judicious remarks on blood-letting. He says—"As horses are naturally timorous and fearful, which is too frequently increased by bad usage and improper correction, they require in some cases, particularly in this of bleeding, to be taken unawares, or by surprise,

and the orifice made into the vein before their fears are excited. For this reason, the fleam and blood-stick have long been in use, and in skilful hands are not improper instruments for the purpose, although with many practitioners the spring-fleam would be much safer, and on that account ought to be preferred. When a lancet is used, the instant the horse feels the point of it he raises or shakes his head and neck, in order to shun the instrument before the operator has time to make a proper orifice, which frequently proves too small or too large; for this reason, those who have tried the lancet have been obliged to lay it aside.

"Many persons tie a ligature or bandage round the neck, in order to raise the vein, and that they may strike the fleam into it with greater certainty; but a slight view of its effects in preventing this and its other consequences, will show the impropriety of the practice.

"When a ligature is tied round the neck previous to bleeding in the jugular-vein, it is to be observed that it stops the circulation in both veins at the same time; hence they become turgid and very full of blood, insomuch that they feel under the finger like a tight cord; and as the parts adjoining are loose and soft, when the stroke is given to the fleam, the vein, by its hardness and tightness, slips to one side, and of course it eludes the stroke; hence a deep wound is made by the fleam to no purpose, and this is sometimes frequently repeated.

"Unskilful persons have likewise a custom of waving or shaking the blood-stick before they strike the fleam in view of the horse, whose eye is fixed on that instrument, and when they intend to give the stroke, they make a greater exertion; hence the horse being alarmed by its motion raises his head and neck, and a

disappointment follows. The struggle that ensues from this circumstance prolongs the operation; the ligature at the same time being still continued round the neck, a total stagnation of the blood in the vessels of the head takes place, and hence it frequently happens that the horse falls down in an apoplectic fit.

" In such cases, the operator being disconcerted, generally desists from any further attempt to draw blood at that time, under the idea that the horse was vicious and unruly, although the very treatment the horse had just undergone rendered bleeding at that time more necessary, in order to unload the vessels of the head in which the blood had been stagnated by the ligature round the neck. Therefore a ligature ought never to be used, as a moderate pressure of the finger below the orifice will always be sufficient to make the blood flow easily; but if the horse is lying on the ground, a ligature may then be necessary.

" But when the ligature is made tight before the orifice is made in the vein, and the horse happens to fall in an apoplectic fit, it may cause a blood-vessel within the head to burst, and death may be the consequence.

" Another custom equally absurd is allowing the blood to fall on a dunghill or on dry sand, so that no distinct idea can be formed of the quantity that is or ought to be taken away. In such cases horses have dropped down insensible from the loss of too much blood before the operator thought of stopping the orifice.

" For this, and a variety of other reasons which might be mentioned, a measure, as above observed, ought always to be used in order to ascertain the quantity of blood that is taken away.

" In pinning up the orifice, some have a custom of raising or drawing out the skin too far from the vein; hence the blood flows from the orifice in the vein into the cellular membrane between it and the skin, which causes a large lump or swelling to take place immediately. This frequently ends in a swelled neck; a suppuration follows, which proves both tedious and troublesome to cure. In cases where a horse may be tied up to the rack after bleeding in the neck, pinning up the external orifice may be dispensed with; but when a horse is troubled with the gripes, or any other acute disease, in which he lies down and tumbles about, it is necessary that the orifice be pinned up with care in order to prevent its bleeding afresh. As the jugular-vein on the near side is commonly chosen for conveniency by those who are right-handed, the young practitioner should learn to perform on both sides of the neck.

" This he will find in practice to be not only useful but sometimes necessary, as he may frequently have occasion to draw blood from horses in very awkward situations: he will likewise find it useful in a variety of cases which it is needless here to particularise.

" The proper place for making the opening in the neck or jugular-vein is likewise necessary to be attended to, for when the orifice is made too low, or about the middle of the neck, where the vein lies deep under the muscular teguments, the wound becomes difficult to heal, and frequently ends in suppuration, with a protrusion of proud-flesh from the orifice, which, unluckily, is as unskilfully treated in the common method of cure, namely, by introducing a large piece of corrosive sublimate into the wound; this not only destroys the proud-flesh in the lips of the wound, but also a

considerable portion of the flesh around it. This is called by the common farriers *coring out the vein.*

" It frequently happens that this corrosive application destroys the vein likewise, and sometimes violent bleeding ensues, so as to endanger the life of the animal. The most proper place for making the opening in the jugular-vein is where the integuments are thinnest, which is about a hand's breadth from the head, just below the branching off of the vein to the lower jaw, and which may be distinctly seen when any pressure is made on the main branch of the vein.

" In performing the operation with a fleam, the operator should hold the fleam between the fore-finger and thumb of the left hand; with the second finger he is to make a slight pressure on the vein, and before it becomes too turgid, or full, make the opening: the same degree of pressure is to be continued on the vein till such time as the quantity of blood to be taken away is received into a proper measure.

" Another great error which generally prevails in opening the vein with a fleam, is the applying too great force, or giving too violent a stroke to it, by which it is forced through the opposite side of the vein. Hence there is danger of wounding the coats of the carotid artery, which lies immediately underneath. Gibson, in his treatise on the diseases of horses, mentions a case of a fine horse that was bled in the plate-vein for a lameness in the shoulder, which was followed by a hard oval swelling about the size of a goose's egg, which extended upwards on the breast, and also down the leg, attended with excessive pain, fever, deadness in the horse's looks, and all the other symptoms of an approaching mortification. In order to avoid the consequences sometimes attending these local operations in the breast, legs, &c., and as horses are more or less

troublesome and restless, whereby accidents of this kind may happen, it will perhaps be advisable in most cases of lameness to draw blood from the neck only, where there is less danger of accident, more especially if a spring-fleam be used, for although it might be of some advantage in particular cases to draw blood as near to the affected part as possible, yet the bad consequences frequently attending it seem to counterbalance any advantage that may be expected from it, especially as the quantity of blood drawn from the small veins is but inconsiderable, and of course no great benefit can be expected from it in horses when they are diseased.

" The principal object in drawing blood is to lessen its quantity, by which the remaining mass circulates with more freedom in the vessels; it likewise takes off the inflammatory tendency of the blood, removes spasms, and prevents other bad consequences that may follow, especially in plethoric habits; and, it is always to be remembered, that when the signs or symptoms of a disease are taken from the motion of the blood, the disorders arising from it depend upon its circulation being either increased or diminished; hence, therefore, all the changes which take place in the texture, quantity, and quality of the blood, are attended either with a diminution or an increase of its velocity.

" Although the cases which may require bleeding are numerous, yet one general caution is necessary, namely, never to take away blood but when it is absolutely necessary, for it is a fluid that may be easily taken away, but cannot be so easily replaced. Besides, the practice of bleeding frequently, or at stated times, is exceedingly improper, as it disposes the body to become weak and relaxed. In bleeding, therefore, a due regard must always be had to constitution, age,

strength, &c., of horses, and the state or habit of body they are in at the time. Although blood ought not, in general, to be taken from horses on trifling occasions, when they may be said to be in health, yet when cases occur that do require it, it may not only safely but usefully be recommended to take away a greater quantity at once than is usually done; for instance, from three to four quarts, according to the urgency of the symptoms at the time, the strength and age of the horse being also taken into consideration.

"For as horses are very subject to inflammatory diseases, and those that are of the spasmodic kind, and as bleeding plentifully relaxes the whole system in these cases, the taking away a small quantity of blood is in fact playing with the disease. The horse is then said to have been bled, and that satisfies the owner and the farrier. Time is thus lost, the disease acquires strength, and it may then be beyond the power of art to mitigate or conquer it, hence the horse falls a sacrifice to timidity and ignorance. It is to be remembered that inflammatory diseases, particularly when the bowels are affected, make a very rapid progress in horses, and if they are not overcome in the beginning by bleeding plentifully, the horse commonly dies in twenty-four hours of a gangrene or mortification in the intestines.

"Mr. Coleman, in the first part of the transactions of the Veterinary College, speaks of the inflammation of the vein which sometimes succeeds bleeding in the following terms:—'Although,' says he, 'a vein is not strictly a circumscribed cavity, yet it has no communication with the air of the atmosphere, and when once exposed, if the parts after the operation do not unite by the first intention, the vein is liable to great mischief.

"Whenever inflammation attacks the internal surface of veins from bleeding or any wound, the disease is to be considered as of the same nature, and requiring the same remedies, as the exposure of joints or other cavities.

"The first symptoms of inflammation and suppuration within a vein, is generally a small degree of swelling about the orifice, the lips of which soon recede from each other, and a little oozing escapes from the part.

"At other times the swelling will be more considerable, attended with frequent hemorrhage, and where the swelling extends much above the orifice, the vein is frequently callous and enlarged as high as the head This enlargement and hardness of the vein proceeds, in part, from the coagulable lymph filling up its cavity, and in part from the vein being thickened, and the lymph sometimes becomes organised, and firmly unites to the internal surface of the vein. In other cases the coagulable substance does not unite to the vein, but acts as a foreign body on the whole internal surface of the vein."

From the reason detailed by Mr. Clark and other eminent professors, it is to be observed that bleeding should never be performed unless it is absolutely necessary, as in many inflammatory cases, or some good and substantial reason can be adduced why such an operation is required.

Should inflammation appear, and the part begin to swell, immediately remove the pin, and after fomenting with warm water try the following lotion:—

Golard's Extract - - -	1 drachm.
Spirits of Wine - - -	half a pint.

Mix this together, then throw it into a quart bottle and fill it up with water.

This must be applied every two or three hours for two or three days; if the animal is at all plethoric a mild dose of medicine may be administered.

It will be needless here to enumerate the many diseases where bleeding will be absolutely necessary; under the head of each separately the subject has been discussed, and either recommended or disapproved of: in times when the horse is shedding his coat it is improper, also after excessive purging by medicine or otherwise

Carriage and draught-horses should never be worked for two or three days after the operation, as the pin may be forced out, the orifice may open and the wound burst out anew, which would be exceedingly dangerous in the night, as it might bleed some time before the accident was discovered, and the horse reduced to great weakness from the excessive loss of blood.

Besides the *jugular-vein*, which is generally the best and most easily got at, blood is taken at times from any of the superficial veins, especially when the inflammatory symptoms are local. The *plate-vein* is often used when the shoulder or any part of the fore-leg is affected; and the *saphœna*, or thigh-vein, which runs across the inside of the thigh, in diseases of the hinder legs and extremities.

All instruments used in bleeding should be very sharp and clean, and after every operation they should be carefully wiped, and never put into the case till perfectly dry, for the edge soon corrodes and will then be useless.

In bleeding in the jugular-vein, the greatest care is requisite, for when that becomes diseased or affected the cure is very tedious and difficult. When inflammation of the vein is obstinate, the orifice of the wound

is anointed with butter of antimony, and a bran-poultice applied.

Blistering.

Since it excites external irritation, and draws away the inflammation from deep-seated disease, is essential in very many cases, particularly as blisters may be applied to almost every part of the animal.

Before administering a blister the hair should be cut very close or shaved off; and in all cases the ointment should be well rubbed in if an effect is wished to be produced.

A very powerful and active ointment is composed as follows :—

Spanish flies, (powdered) - -	2 ounces.
Resin - - - - -	2 ounces.
Hog's Lard - - - -	8 ounces.

Care is necessary to have the horse so secured when blisters are applied that he may not blemish the part, for if he can reach the place by turning and stretching his head and neck the muzzle would be blistered unless the head is tied.

When the blister has produced the wished-for effect, the use of olive or neat's-foot oil is recommended, this will prevent the skin from cracking, for if sores arise in this way they are difficult to heal.

After a blister it is necessary to keep the animal as little exposed to cold as possible, especially if the ointment is used on the legs. Mustard is not frequently applied for disease of the horse

To make a liquid blister, turpentine and an infusion of cantharides is used. Tincture of croton is an active blister. Blisters are very efficacious in cases of deep-

seated inflammation, and if life is endangered they cannot be too active.

Cropping or Amputation of the Ears.

Some few years ago an attempt was made to introduce this operation generally, and make it the object of taste and fashion. Reason and humanity, however, triumphed, and the practice has become obsolete except in some few rare cases of disease. Is it necessary to make any remarks on or to expose the barbarity of Cropping? The real judge and admirer of the horse must be perfectly convinced that that animal's ears in their natural shape and size constitute the chief beauty of the head, and that it is utterly out of the power of any one to make them handsomer than nature has already contrived.

Disease might, however, render Cropping necessary, but as all should be perfectly aware no part of any animal was made in vain, but for some wise purpose, so the ears should not be cut away unless necessity deemed such an operation requisite.

Curved clams, called the *cropping-irons*, are called into use for this purpose; into these the ears are introduced, and at one stroke the upper part is severed from the lower, more or less, at the option of the operator. As soon as cut, the skin and muscles recede considerably from the gristle of the ear; but this need not be any cause of alarm to the owner, the parts will heal in a few days without any particular attention more than keeping them clean; the animal must be confined, and his diet should be moderate and cooling until the ears are well.

The horse will often exhibit considerable shyness

after this operation, but with a little kind usage and carefulness in putting on the bridle and halter, in time, as the ears get well, this shyness goes away, but bad effects generally result from harsh treatment.

Amputation of the limbs of the horse is not usual; among cattle, particularly the cow, when her value is great from the quantity of milk she gives, it has sometimes been performed, but even that rarely.

Amputation of the penis is requisite in certain cases where disease attacks that member. Such is seldom necessary, and we pass to subjects of greater importance. In the "Veterinarian," No. 10, an account of this operation will be found.

Firing.

To the operation of Firing the horse is often subjected, and indispensably so, for the cases are numerous in which practice and experience have shown us that all reliance on milder methods are futile; at the same time there are some cases where we ought to try the effects of other remedies ere we resort to this painful application of the *cautery*.

This instrument is of various constructions, according to the part to which it is applied.

It is requisite for the safety of all parties concerned that the animal is cast, for no person can fire without the horse is perfectly secured, and, moreover, the operator would stand in great jeopardy from such negligence.

The iron should be but slightly red when heated, and the skin should by no means be penetrated; this might bring on inflammation and disease, which would destroy the value of the horse by leaving considerable

blemish. But there are times when the skin will separate a few days after the operation, even with the greatest care, but whatever ulceration arises then may be much easier treated and cured than penetrating the skin with the cautery itself. Thus it is evident that in the use of this instrument care and judgment are very necessary; not only must the operator apply it skilfully, but he must guard against the efforts of the tortured animal.

Twelve hours after the use of the cautery gently spread some oil or lard over the lines, this softens the skin and prevents any likelihood of separation.

Blisters are only to be used after firing when the bony tumours for which it has been applied are of great extent, or the affections have been of long standing

Bandages should be carefully avoided. When ulceration takes place, dress the cracks with the following ointment:—

Resin - - - - -	1 ounce,
Hog's Lard - - - -	5 ounces,

melt these over a fire, and when nearly cold, add—

Calamine Powder - - -	2 ounces.

This is to be well mixed and then applied to the sores.

It is a good practice to turn a horse out to grass for three or four months after the operation, as great exercise or hard work will produce inflammation, and destroy, in some instances, the effects firing was intended to obtain.

If there is no opportunity for this, the horse should be soiled in a loose box, for ease and quiet are absolutely essential for at least three months afterwards.

Firing has been recommended as a certain method of preventing any bad effects from the bite of a mad animal: sometimes an iron whose extremity is rounded

has been called into use in cases of profuse bleeding, from accidental wounds as well as from surgical operations.

Some persons burn away the hair previous to the use of the cautery; this is unnecessary cruelty. If the scissars will not cut the hair close enough, shave the part, which will give less pain than burning.

Rowels

In many cases are preferable to blisters, especially when inflammation has existed some considerable time; by acting slower, and less extensively, they promote the irritation of the surface, and excite a discharge which can better be prolonged than when the blister is used.

In cases of swelled legs, and obstinate grease, they are very serviceable; but the parts in which they are chiefly inserted are the breast and the belly, and they are very frequently used for sprains of the joints or of the muscles of the shoulders.

Sometimes several rowels are made at the same time, but if great debility exists, much care and judgment is requisite, and rowels are best avoided, for the discharge that flows will be very thin and ichorous, or perhaps the insertion will prove dry, and in this case mortification ensues.

Rowels must be inserted as near as possible to the seat of the affection they are intended to relieve. The method of operating is as follows:—

Take up a part of the skin with the finger and thumb, and by means of a lancet, or the improved rowelling-scissars, make an incision about an inch in length; thrust the finger or handle of the new scissors

into the wound, and separate the flesh from the cellular substance beneath; this is done all round as far as the finger will extend, which produces a cavity between two and three inches wide. A piece of tow anointed with blistering or any other stimulating ointment to promote inflammation and discharge, must now be inserted, in quantity sufficient to fill up the cavity and leave a small end hanging from the mouth of the wound, whence the discharge will drop more or less abundantly according to the nature of the complaint or the strength of the ointment. The tow must be changed daily, and the ointment renewed or discontinued as the case requires.

The circular piece of leather with a hole in the centre, as used by the old farriers, is gradually getting into disuse, and is objectionable in as much as it generally leaves a blemish, whereas by the new method the rowel will close and heal and scarcely be perceptible.

Setons

Are very beneficial in cases of abscess, especially in pole-evil or fistulous withers; indeed in most fistulous wounds they are highly necessary, for by draining off the humour from the very bottom of the part affected, they prevent the abscess eating its way still deeper into the body, which would render unavailing all attempts to procure a speedy cure. In inflammation of the eyes a seton may be used in the cheek; but where extensive inflammation of any of the larger organs takes place, blistering is far preferable to either rowels or setons.

The method of applying them is thus:—With a large needle, or instrument made for such purposes,

introduce a piece or pieces of tape or cord through the abscess from side to side, or from the top to the bottom, as the case may require, or according to the situation, of which the operator must be the best judge: the ends of the tape are then knotted or tied together. Previous, however, to the introduction of the seton, the tape must be wetted with some acrid liquid; spirit of turpentine may be used, or,

Corrosive Sublimate	-	half a drachm,
Spirits of Wine	-	2 ounces,

mixed.

During the day it is necessary to move the seton occasionally, and wet it each time in order to promote the discharge.

Setons will leave great blemishes if care be not taken during the period they are used, especially if they are heedlessly torn away instead of drawing them out gently.

Docking,

Or, Amputation of a part of the Tail, is an operation which custom has made very prevalent; indeed we but rarely see a horse now-a-days whose tail has not been thus artificially shortened. The operation is simple, and the length of the tail, when docking, rests entirely at the option of the owner. Having felt for the joint which lies nearest to the length proposed, gather up the hair and turn it back in a contrary direction to its natural growth, and tie it with cord or tape two or three inches above the joint where the amputation is to take place, cutting with a pair of scissors that portion of the hair growing immediately around the joint to be severed. Having now secured the horse's head

and feet with a side line, so that the practitioner may operate with safety to himself, the tail must be placed between the docking-shears, and at one steady stroke the lower part should be dissevered from the upper, and the operation is performed. Blood will naturally flow, and this in some degree is beneficial, but after a short time it must be stopped, and this is done by the application of a hot iron to the stump. The iron is made for all amputations of the same kind, with a hole in the centre, as it is dangerous to sear the bone, and a dull red heat is quite sufficient to stop the hemorrhage. Some persons use other methods, but many of them are cruel and unnecessary; a mild application of the cautery being not only the best but speediest in its effects. The use of rosin with the cautery tends oftentimes to produce inflammation, and is better not applied. Farmers sometimes dock with a large and sharp knife and mallet, but it must be observed that the operation should always be performed at one stroke, as the quicker it is done the less pain is felt by the animal. It is a practice in the country to dock colts when very young, at times a few days after they are dropped; and this doubtless is the safest period to operate on them, as none ever die through the amputation at that early age. Should the animal after docking get a lock-jaw, which, however, oftener follows the cruelties attendant on the operation than the amputation itself, it will be necessary to try another joint.

Nicking

Is another operation which fashion has made very necessary in some cases. Care is required in perform-

ing it, as the consequences are more frequently fatal in this than in docking; and the animal ought to be more safely secured, as the pain is much more severe than in the last instance. As before observed, the tail has three different sets of muscles; one set is used to raise it, the second to depress it, and the third to give it that lateral motion we observe when the animal whisks it from side to side: the second and third sets, however, are sometimes used conjunctively, and then the erector, or first set of muscles, have not sufficient power to counterbalance the effects of the depressor and lateral muscles, consequently the tail, except when the horse is excited, is usually found resting near the buttocks. It is to give him that elevation of the tail which we observe in the horse when his passions are roused, that the operation of Nicking is performed, and this is to cut through the depressor and some of the lateral muscles, and the erector muscles can then bring the tail to a position more or less elevated, according to the depth of incision on the former muscles.

The tail of some horses, rising high out of the back, have naturally an elegant and beautiful sweep, and do not require nicking. But there are, on the other hand, horses which invariably have a sluggish appearance, and carry the tail incessantly downwards, unless much excited, and the operation of nicking is always found to improve the appearance of these, although the tail in this case, which is either carried in a straight line or has a slight curve upwards, is never so handsome as when naturally elevated.

Having carefully secured the horse, in some instances it is deemed necessary to cast him, as the safety of the operator is greatly at stake from the severity of the incision; then grasp the tail, and about three or four

inches from the root, with a very sharp knife, cut a transverse line across the *centre* of one of the bones deep enough to sever the muscles, but take care to avoid the artery running near the bone; a skilful person should perform this at one trial, and as rapidly as possible. The one incision is generally all that is requisite for a racer or blood-horse; a hunter may sometimes require a second about an inch and a half or two inches below the first; and the common hackneys and cock-tails usually have three incisions.

When the animal is nicked near one of the joints of the tail instead of the centre of one of the bones, the ligament which unites these bones is apt to be wounded, and thus the appearance is deformed and ugly.

The section being complete, the hemorrhage must next be stopped, and the best method is to twist some stripes of lint or tow, and having inserted one in each nick, tie them on the back of the tail, and on the morrow, when the bleeding will have ceased, cut these bandages, and leave just as much as the coagulated blood keeps in the incision. These bandages should be more or less tight, according to the flow of blood, and at the furthest removed in twenty-four hours, as the tail is apt to swell, and inflammation would be the consequence of a lengthened pressure.

Having thus attended to the wounds, the next step is to bring the tail to that position which the owner deems necessary. For which purpose a short cord is tied to the hair at the end of the tail, and to this two longer pieces are joined, one from each side of the stable, and these running through a pulley, have a weight attached to the end just sufficient to raise the tail to the wished-for elevation. Some prefer affixing a cord to the girth, as thus elevate the tail by bending it over the back. The pulleys will be found the least

painful. The weights attached to each, however, should be moderate, as, if the incisions be not deep enough, it were vain to attempt to strain the tail higher than the muscles would allow, and, moreover, it gives unnecessary pain to the animal. When the incision is healed, the pulleys may be removed, but whilst they are open they must be kept clean. The horse may be exercised morning and evening. The use of the weights and pulleys, or the girth and cord, are essentially necessary, for if they are not used, the operation of nicking is rendered unavailing, and the animal has been put to unnecessary pain. Should any symptoms of locked-jaw follow, it will be necessary to dock one joint higher than the incision or incisions

While we are speaking of the several amputations a horse is often doomed to undergo, it may not be out of place to mention Castration.

Castration,

Is an operation performed in three different ways. 1. By Cauterisation, which is now most generally adopted, as it is proved the safest. 2. By *Ligature*, which is the most barbarous and inhuman method that could well be invented. 3. By *Excision*, as is usual with the human subject; this, however, seldom answers the expectation of the operator; in many cases it has been fatal, and consequently but seldom practised now.

The best time for performing this operation is in the month of May or August, the temperature of the atmosphere being then more regular and the weather mild, both of which are essentially necessary to the health of the horse in such a case. The age of the

animal varies according to the caprice of the owner, although when between two and three years old appears to be the most popular age for castrating. Some, however, think it most advisable to *cut* between the second and fifth months, as then it does but little impede the growth, and few are lost at that age. Those that wish for good draught-horses, where the limbs must be stout, strong, and well developed, the crest lofty, and the forehead full, prefer waiting till the second or even the third year, when the colour of the hair likewise assumes a deeper and brighter tone of colour than when the animal has been operated on at an earlier stage of his life. Colts do not require much preparation; but when a full-grown horse is to cut, if his living has been good, and he is in fine condition and at all plethoric, it is necessary to bleed and administer a purgative, and lower his diet, when he will soon be fit for the operation; on the other hand, a horse in a state of great debility is equally unfit as a full plethoric one. It may be here remarked that there exists a great dissimilarity between a horse which has been cut when young, and one allowed to reach a maturer age. In this last case the windpipe is larger, and, like the stallion, he has a better wind than geldings of a younger age; the head has a broader front, and a more decided character, the eyes are more prominent, and the voice of a deeper and more sonorous tone.

Castration by *cauterisation* is the method usually practised by veterinary surgeons, although where there are several methods each will find its advocates. Having ascertained that *hernia* or rupture is absent, after casting and properly securing the animal, open the bag on either side, and having cut off the testicle, apply the hot iron, but do not keep it to the wound an unnecessary length of time, as that is an unavailing

torture. As soon as the operation is performed let the animal be walked about for an hour or so, this will prevent local congestion, than which nothing can be so hurtful.

Castration by *Ligature* is to tie the testicle and scotum tightly compressed between two pieces of wood, when mortification soon ensues, and they drop off, or otherwise to tie a thin cord tightly round the bag, near the belly, this process stops the circulation of the blood, and the testicle and bag drop off in the course of a few days—both these methods are dangerous and sadly cruel towards the horse, they prolong the pain, and frequently cause inflammation and death.

Castration by *Excision* is performed after the manner of operation on a human being, but so many eminent veterinary practitioners have lost horses by it that they seldom make a practice of adopting this method, although a few still adhere to it as producing less pain, and the animal is sooner brought round again than by any other process. In Prussia the method is very general.

When the operation has been carefully performed, morbid consequences seldom occur. Exercise is required to prevent swelling of the parts. Good green food, cool air, and early evacuations, will soon restore the animal to condition; when any inflammation follows, bleeding and fomentation will be found necessary, then rub a little digestive ointment over the scotum and sheath.

It cannot be doubted that the best operators in this case are always the common country farriers, who from devoting themselves entirely to the occupation soon become proficients. "Practice makes perfect," is a very common saying, and certainly the manual dexterity exhibited by these men would astonish at times the

most efficient professor of veterinary science. Impressed with the idea that expertness and promptitude in many operations are essential to the welfare of the horse and the pocket of the owner, many prefer these farriers to the more scientific veterinarian, and these gentlemen often recommend their employment. An example may illustrate this:—Mr. Blaine was sent for to fire a valuable horse, the property of J. Bean, Esq., Sussex; he gives the following account of it:—

"It was my first essay in firing on my own account, and *fired* as I was with my wishes to signalise myself, I laboured to enter my novitiate with all due honour. The farrier of the village was ordered to attend, a sturdy old man, civil enough, but looking as though impressed with no very high respect for a *gentleman-farrier's knowledge*. The horse was cast, (I daresay awkwardly enough), and secured, as will appear, even more so. I however proceeded to show the superiority of the new over the old school. I had just then left the Veterinary College, not as a pupil, but as a teacher, which I only mention to mark the climax. On the very first application of the iron up started my patient, flinging me and my assistants in all directions from him, while he trotted and snorted round the yard with rope, &c., at his heels. As may be supposed, I was taken *aback*, and might have gone *back* as I came, had not the old farrier, with much good humour, caught the horse round the neck with his arms, and by some dexterous manœuvre brought him on his knees, when, with a jerk as quick as unexpected, he threw him at once on his side, where our immediate assistance fixed him, and we proceeded. It is needless to remark I retired mortified, and left the village-farrier lord of the ascendant."

In France, and many other parts, castration by

means of the clams is a very general method, but to this there are attached many disadvantages, and our professors do not approve of it altogether. It is the most ancient system of operation, and was used by the ancient Greeks.

SHOEING.

Of all the operations to which the horse in his domesticated state is subjected, the most important and necessary is Shoeing; and having, on that account, occupied the deepest study, it has consequently, of late years, been much improved.

No precise date can be fixed as to when shoeing was first commenced, and by whom introduced. But we are informed William I., better known as the Conqueror, established the custom in England. The present artificial improvements in the art of road-making urges the utility of the operation, in order to protect the hoof from injury, and to prevent it from being too speedily worn down, although unfortunately, in some cases, it entails on the animals, even where the greatest care is used, unavoidable evils, such as contraction of the feet, lameness, &c.

Many of the evil consequences of shoeing arise from the operator having but a very imperfect knowledge of the structure and various functions of the feet. The following observations are necessary to be borne in mind:—

1. The hoof is divided into four parts, namely, the wall or crust, the bars, the sole, and the horny frog.

2. The natural form of the hoof is invariably cir-

cular in its healthy state, hence it necessarily follows that in shoeing that form should be preserved as nearly as possible.

3. The contents, or internal cavity of the hoof, when free from disease, is occupied by the sensible parts of the foot, namely, the coffin-bone, the sensible sole, the sensible frog, the navicular bone, and numerous cartilages.

4. The crust is a little more than half an inch thick at the toe, gradually becoming thinner towards the quarter and heels.

5. The obliquity of the crust varies in different horses; in sound feet it rests flat on the ground, and slants backwards in an angle of forty-five degrees; when the crust has "fallen in" more than this, disease generally ensues.

6. The inside of the crust is united to the extreme bone of the foot by a number of sensible laminæ, very elastic in their nature.

7. By these laminæ the whole weight of the horse is supported, and their elasticity prevents concussion.

8. The bars are a continuation of the crust, forming an angle at the heels, and terminating in a point at the toe of the frog.

9. The internal portion of the bars, like the crust, are formed of laminæ; hence, it would appear, they are part of the same substance, and placed there to fulfil the same office, namely, to prevent separation and dislocation of the horny from the sensible portion of the foot.

10. The horny sole is more elastic than the crust; by its descent at the heels, and the power of expansion, it preserves the sensible sole from pressure. Equal danger is to be apprehended from the want of concavity in the sole as from there existing too much.

11. The external frog is convex, and although horny and insensible, is softer and more elastic than the sole; their nature is totally distinct, yet they are firmly united.

12. The sensible frog corresponds with the horny in form, is very elastic, and united by cartilages.

13. The use of the frog is to give safety to the pace of the animal, and prevent it from slipping: the sensible and horny frogs, by their great elasticity, act as a spring, and at the same time are powerful agents in expanding the heels: when the frog is too much elevated above the ground, and its substance cut or worn away, contraction of the foot must follow. Some writers, among whom is Mr. St. Bel, assert that the frogs are to protect the tendon; this notion is now exploded.

14. The foot is filled with nervous fibres, ligaments, cartilages, blood-vessels, &c., and consequently highly sensible and elastic.

The hoof of a colt feels no inconvenience from the hardest roads; the necessity of employing a shoe, however, is unavoidable, since by friction the hoof is rapidly worn away. Shoes are not required to be broad in the surface, indeed the narrower they are the better and firmer hold the foot will have, especially on turf or soft slippery ground.

The greatest evil in shoeing arises from the introduction of nails; and notwithstanding many men of note in the veterinary art have strenuously laboured to obviate the mischief, or to discover some new and better mode of fixing the shoe, their efforts have not hitherto been crowned with success.

Great ignorance was displayed in the earlier methods of shoeing: the bars were totally cut away, and the frog considerably pared down; the shoe was badly

shaped, generally elliptically, and was put on the foot red-hot; the result was what might be expected—the functions of the bars and frog were destroyed, and the ill-shaped shoe acting with these, contraction in its worst form appeared, while the application of the hot shoe dried up the moisture of the crust

The first who made any reformation in this method was Lafosse: he introduced the half-moon shoe. This was a material improvement; its semicircular shape was more adapted to the healthy hoof, and not reaching beyond the middle of the foot, the nails were placed near the toe; hitherto their situation had been nearer the heels, which prevented a proper action of the sole and frog, and thus destroying the natural spring and elasticity of the foot.

Bracken and Bartlet made Lafosse's treatise known in England, but his method had this disadvantage, that in the canter the horses were apt to slip, and the heels were worn down very fast.

To Lafosse succeeded William Osmer, who first prohibited the extensive paring of the hoof that had as yet been practised. The crust was made smooth by rasping; the frog and bars were only to be cut where the edges were ragged: the shoe was equally thick in every part; the surface next the ground was flat, but narrower behind than before.

Many now appeared who introduced various methods of shoeing and forms of shoes, all of which displayed more or less ingenuity. Lord Pembroke and Mr. Bracey Clark deserve mention. The Veterinary College threw out many hints and improvements, and Mr. Coleman laboured much to extend the knowledge already obtained.

Mr. Clark's shoe did not materially differ from that recommended by Osmer: he raised many objections

against elevating the heels with calkins, preferring an ice-nail, admitting, however, that sharp calkins were oftentimes used judiciously in hilly countries.

Lord Pembroke urged the necessity of the shoe being narrower at the heel than elsewhere, which prevented stones or other injurious weapons lodging in the foot, and by its pressure causing lameness; that it should be as light as possible, but not thin as to bend, which would depend upon the quality of the iron; that both surfaces of the shoe should be flat; and that three, and at the most four nails, were sufficient; these were placed at the side; the toe was cut square and short; the fore and hinder-feet are to be shod alike, except when the ground is hilly, when the shoes of the hinder-feet must be a little turned up behind. Farriers who are too lazy to make the shoe fit the foot, but place it on hot, deserve the severest censure.

Mr. Lawrence speaks in favour of the French method of driving the nails into shoes, which is in an oblique direction, so that the points come out about three-quarters of an inch above the shoe; by this method it is held firmer than by the English method, which is to drive the nail as high as possible up the wall, and this leaves but a small portion to clench and secure the shoe.

The preparation of the foot, and the operation of shoeing, should be performed as follows:—

1. In taking off the old shoe it is always necessary, (although seldom done,) to raise the clenched portion of the nails, for by such neglect the nail-holes become considerably enlarged, and not unfrequently pieces of the crust are torn off; this must naturally weaken the hold of the new nails, and perhaps injure the foot in other ways.

2. The edges of the crust must then be rasped to

ascertain whether any stubbs remain behind; this process will likewise remove the dirt and gravel.

3. Paring is the next process, and perhaps the most difficult. The quantity to be cut away will vary with different horses. The flat foot needs very little paring; in the concave foot the horn may be cut till the sole yields to moderate pressure; in the pomied foot remove only the ragged edges; the strong foot will bear more cutting than any other. The buttress should seldom, or never, be used; great damage has been done by the use of that instrument: over the drawing-knife the operator has a proper and necessary command, and can use it to what extent he thinks fit.

A sufficient quantity of horn should be left on the sole to protect the internal parts from being bruised, and yet allow the external sole to descend: the pressure of the thumb will determine this, and when the sole yields in the slightest degree that part should be left.

The crust must be level all round, and a degree higher than the sole.

The heels must be pared according to the wear they have sustained, and should always be perfectly level.

The bars should be left prominent, and scarcely touched, unless it is of the same level with the crust; this must be especially observed if the bars are weak.

That portion between the crust and bar should be pared very carefully.

The frog must be cut away according to the shape and prominence of the foot, but it must project so much as to be left within and above the lower surface of the shoe; descending lower than this, it will be injured, and if it be allowed to r main higher, it will not touch the ground, and its intention is thus rendered abortive, and its functions cannot be discharged.

4. For a perfect hoof, the shoe should not be more than three-quarters of an inch broad, and of the same thickness at the heel as at the toe.

5. The shoe should never be put on hot, consequently pattern-shoes should be made for a good foot and a valuable horse.

6. The English system of "fullering," or making a furrow all round the lower surface of the shoe, to admit the heads of the nails to a level with it, should be laid aside. The French method of making holes with a punch of sufficient size to bury the head of the nails, is preferable.

7. The saddle-horse requires the shoe and nails to weigh from 12 to 14 ounces; the coach-horse from 16 to 20 ounces.

8. The hinder differs from the fore-foot in being straighter at the quarters; the shoe must be framed accordingly.

9. No horse should be allowed to wear the same shoes longer than a month.

10. The bar-shoe, which is often called into use when the foot is affected with corns, sandcrack, &c., or in cases of pumiced feet, should never be worn for more than one or two shoeings, or longer than the disease requires. They are very unsafe in frosty weather.

11. The most important object to be borne in mind is the treatment of the foot at the time of shoeing, and one inflexible rule should be strictly adhered to, viz., never to permit the blacksmith to shape the foot to the shoe, but to oblige him to shape the shoe to the foot, nor to suffer him to cut away more of the hoof than would naturally be worn away were the animal in a state of nature."

ON VICE.

ALTHOUGH the horse has long been subjected to the use of man, and in his domesticated state exhibits many noble and excellent qualities, yet some few are, nevertheless, addicted to many unpleasant and at times dangerous habits or tricks, which are denominated Vices. Many of these, however, originate in the carelessness or wanton disposition of the grooms, or stable-boys, who will be found wilfully teasing the horse at the expense of his temper and comfort. Some vices, however, are innate, and these are not readily dismissed; others again are the effect of playfulness.

They may be classed as follows:—Restiveness—Rearing—Kicking—Jibbing—Biting—Running away—Shying. To these might be added many more, of which mention shall be made under a general head in the course of the treatise.

Restiveness is a vice the most disagreeable and dangerous to which the rider can be exposed. A horse given to it can never be depended on. It is doubtless the seeds of a bad education, and though efforts the most persevering be practised, the animal may be tranquilised for the moment, but a cure can never be wholly wrought; indeed, Mr. Youatt, and several other writers agree, that, generally little wisdom is evinced, nor can any regard for safety exist with him who attempts to master an obstinately-vicious or restive horse.

Rearing results from many causes, but must more frequently be attributed to vice than playfulness. In weak horses it is very dangerous, as they are apt to fall backwards, to the imminent peril of the best riders. When it arises from a tender mouth, the remedy is

simple; a light hand and the snaffle-bridle, instead of the curb and bit, will be the immediate cure. Some riders employ the following method with such horses as persist in this vice · they occasionally carry an oil-flask filled with water, as soon as the animal mounts into the air, they break this over his head, and the water running into his eyes and ears makes him quickly descend again. After a few repetitions of this mode of proceeding, a cure is sometimes effected, especially where natural vice does not exist. The habit of beating the horse's head with a thick stick in cases of this vice is worse than useless, it renders the animal shy, obstinate, and is apt to bring on that terrible disease of pole-evil.

Kicking is a vice more frequent with mares than with horses. When kicking in harness is discovered, the animal should not be trusted again; it is very difficult to cure, and the life or limbs of the riders are always endangered by it. When addicted to kicking in the stable, a cure is effected frequently by fastening a thorn bush or piece of furze in such a position that, if the horse attempts such a thing, he soon discontinues it, in preference to feeling the severity of the prickles. The application of the log to the leg is another method of treating violent kickers. Tickling a horse will generally end in his attaining the vice of kicking. The same may be said of all vices; they are generally the result of ill-treatment or the folly of those who have the horses under their charge. In draught-horses *jibbing* or *backing* will often result from the position of the collar or some sore on the neck; in that case a remedy is easily prescribed. Some horses have a natural aversion to the collar; if persuasion and coaxing will not take effect, a little coercion brings all to a reasonable and proper issue: brutality effects nothing,

but is oftentimes the antipodes to every thing that is useful, and never produces the object in view. The coolest and best-natured rider will always succeed the best. Generally, it is impossible to be too circumspect in every lesson to which the horse is subject, in chastisement or kindness. The rider should make it a duty to discover every quality of the horse, and with gentleness and coaxing the good can always be cherished, and the bad, by proper restraint and correction can generally be cured. When *running away* is a frequent practice, keep the horse well in hand, and when he feels inclined to halt, use the spur and whip and fatigue him, and he may possibly by degrees abandon the vice. *Shying* often results from a deficiency in sight. When no such defect is present, the horse should be caressed, and walked slowly up to the object of his terror. An article in the "Veterinarian," written by Mr. Castly, a gentleman whose experience in horse-flesh has been considerable, and practice in the veterinary art extensive, contains the following very just remarks on this subject :—

"From whatever cause the vicious habits of horses may originate, whether from some mismanagement, or from natural badness of temper, or from what is termed in Yorkshire a *mistetch*, whenever these animals acquire one of them, and it becomes in some degree confirmed, they very seldom, if ever, altogether forget it. In reference to driving, it is so true that it may be taken as a kind of aphorism, that if a horse kicks once in harness, no matter from what cause, he will be liable to kick ever afterwards. A good coachman may drive him, it is true, and make him go, but he cannot make him forget his vice ; and so it is in riding. You may conquer a restive horse ; you may make him ride quiet for months, nay, almost for years together, but I affirm,

that under other circumstances, and some future opportunity, he will be sure to return to his old tricks again."

In illustration of these remarks, the writer gives two notable instances, which, from their singularity, deserve attention; especially the last, which is peculiarly characteristic of the people of our "Sister Isle," where it occurred.

"When a very young man, I remember purchasing a horse at a fair in the north of England, that was offered very cheap on account of his being unmanageable: it was said that nobody could ride him. We found that the animal objected to have any thing placed upon his back, and that when made to move forward with nothing more than a saddle on, he instantly threw himself down on his side with great violence, and would then endeavour to roll on his back.

"There was at that time in Yorkshire a famous colt-breaker, known by the name of Jumper, who was almost as celebrated in that country for taming various horses into submission, as the famed Whisperer was in Ireland. We put this animal into Jumper's hands, who took him away, and in about ten days brought him home again, certainly not looking worse in condition, but perfectly subdued, and almost as obedient as a dog, for he would lie down at this man's bidding, and only rise at his command, and carry double or any thing. I took to riding him myself, and may say that I was never better carried for six or eight months, during which time he never showed the least vice whatever; I then sold him to a Lincolnshire farmer, who said that he would give him a summer's run at grass, and show him a very fine horse at the great Horncastle fair.

"Happening to meet this gentleman the following

year, I naturally enough inquired after my old friend. 'Oh,' said he, 'that was a bad business; the horse turned out a sad rebel. The first time we attempted to mount him, after getting him up from grass, he in an instant threw the man down with the greatest violence, pitching him several yards over his head; and after that he threw every one that attempted to get on his back. If he could not throw his rider he would throw himself down. We could do nothing with him, and I was obliged at last to sell him to go in a stage-coach.'"

This "Jumper" appears to have been an extraordinary character, sometimes dressed in the skin of a bear, at other times fantastically attired with ribands, &c., and was not particular on what he exercised his power, whether horse, bullock, or any other animal, and used frequently to be seen riding a buffalo. He was a man of the most surprising strength and fearlessness, and was not deficient in agility and quickness; and in these chiefly depended his great success in the art of taming and training his antagonists; although these occasionally failed, none were ever made acquainted with the other means he employed when his physical strength proved inefficient. Sullivan, to whom the other stories relate, seems to use very different measures, never having recourse to brute force.

The other account is connected with the celebrated "Irish Whisperer," called Sullivan, whose feats were first made public by the Rev. Mr. Townsend in his "Statistical Survey of Cork."

"At the Spring Meeting of 1804," (Mr. Castly continues), "Mr. Whalley's King Pippin was brought on Curragh, at Kildare, to run: he was a horse of the most extraordinary savage and vicious disposition. His

particular propensity was that of flying at and worrying any person who came within his reach; and, if he had an opportunity he would get his head round, seize his rider by the leg with his teeth, and drag him down from his back. For this reason he was always ridden in what is called a sword, which is nothing more than a strong flat stick, having one end attached to the cheek of the bridle, and the other to the girth of the saddle, a contrivance to prevent a horse of this kind from getting at his rider.

"King Pippin had long been difficult to manage, and dangerous to go near; but on the occasion in question, he could not be got out to run at all. Nobody could put the bridle upon his head. It being Easter Monday, and consequently a great holiday, there was a large concourse of people assembled at the Curragh, consisting principally of the neighbouring peasantry; and one countryman, more fearless than the rest of the lookers-on, forgetting, or perhaps never dreaming that the better part of courage is discretion, volunteered his services to bridle the horse. No sooner had he committed himself in this operation, than King Pippin seized him somewhere about the shoulders or chest, and, says Mr. Watts, (the gentleman from whom Mr. Castly obtained his information), 'I know of nothing I can compare it to so much as a dog shaking a rat.' Fortunately for the poor fellow, his body was very thickly covered with clothes, for on such occasions an Irishman of this class is fond of displaying his wardrobe, and if he has three coats at all in the world, he is sure to put them all on.

"This circumstance, in all probability, saved the individual who had so gallantly volunteered the forlorn hope. His person was so deeply enveloped in extra-teguments, that the horse never fairly got hold of his

skin, and I understand that he escaped with little injury, beside the sadly-rent and totally-ruined state of his toggery.

"The Whisperer was sent for, who, having arrived, was shut up with the horse all night, and in the morning he exhibited this hitherto ferocious animal following him about the course like a dog, lying down at his command, suffering his mouth to be opened, and any person's hand to be introduced into it: in short, as quiet as a sheep.

"He came out the same meeting and won a race, and his docility continued satisfactory for a long time; but at the end of about three years his vice returned, and then he is said to have killed a man, for which he was destroyed."

The Rev. Mr. Townsend in the work already mentioned gives the following account of this man, with an example of his skill in the art of breaking vicious horses:—

"I once saw his skill tried on a horse which could never before be brought to stand for a smith to shoe him. The day after Sullivan's half-hour's lecture I went, not without some incredulity, to the smith's shop, with many other curious spectators, where we were eye witnesses of the complete success of his art. This, too, had been a troop-horse, and it was supposed, not without reason, that after regimental-discipline had failed no other would be found availing. I observed that the animal appeared terrified whenever Sullivan either spoke or looked at him; how that extraordinary ascendancy could have been obtained is difficult to conjecture.

"He seemed to possess an instinctive power of inspiring awe, the result, perhaps, of natural intrepidity, in which, I believe, a great part of his art consisted,

though the circumstance of the *tete-a-tete* shows that on particular occasions something more must have been added to it. A faculty like this would in some hands have made a fortune, and I understand that great offers were made to him for the exercise of his art abroad. But hunting was his passion. He lived at home in the style most agreeable to his disposition, and nothing could induce him to quit Duhallow and the fox-hounds."

The author of "Fairy Legends, and Traditions of Ireland," thus describes his abilities and appearance :—

"He was an awkward ignorant rustic of the lowest class, of the name of Sullivan, but better known by the appellation of the 'Whisperer.' His occupation was horse-breaking. The nickname he acquired from the vulgar notion of his being able to communicate to the animal what he wished by means of a whisper; and the singularity of his method seemed in some degree to justify the attribute. In his own neighbourhood, the notoriety of the fact, made it less remarkable, but I doubt if any instance of similar subjugating talent is to be found on record. As far as the sphere of his control extended, the boast of *vini, vidi, vici*, was more justly claimed by Sullivan than by Cæsar himself.

"How his art was acquired, and in what it consisted, is likely to be for ever unknown, as he has lately left the world (about 1810), without divulging it. His son, who follows the same trade, possesses but a small portion of the art, having either never learned the true secret or being incapable of putting it into practice. The wonder of his skill consisted in the celerity of the operation, which was performed in private without any apparent means of coercion. Every description of horse, or even mule, whether previously broken

or unhandled, whatever their peculiar habits or vices might have been, submitted without show of resistance to the magical influence of his art, and in the short space of half an hour became gentle and tractable. This effect, though instantaneously produced, was generally durable. Though more submissive to him than others, they seemed to have acquired a docility unknown before.

" When sent for to tame a vicious beast, for which he was either paid according to the distance, or generally two or three guineas, he directed the stable in which he and the object of the experiment were to be shut, with orders not to open the door until a signal was given. After a *tete-a-tete* of about half an hour, during which little or no bustle was heard, the signal was made, and upon opening the door the horse appeared lying down, and the man by his side playing with him like a child with a puppy-dog. From that time he was found willing to submit to any discipline, however repugnant to his nature before."

Mr. Castly saw the son of this Sullivan try his efforts on a horse of the regiment to which that gentleman belonged, but the mantle of the father not having dropped on the son, it proved a total failure. The elder Sullivan's fame rests upon the authority of so many persons worthy of credit, that the performance of such wonders as the most savage horses yielding at once to his influence might otherwise be doubted.

ON STABLE MANAGEMENT.

Nothing tends so materially to improve the appearance, condition, and health of the horse, as proper

Stable Management; it necessarily, therefore, from its importance, demands our strictest observation and care, since to negligence in this department of the general economy of the animal may be traced most of those diseases which militate against and derange the natural functions of the body.

In his natural state, the horse enjoys all the advantages of fresh and pure air, with no restriction of light; the first things then that claim our attention must be the *Construction* and *Ventilation* of the stables.

In the construction of these buildings there are many points to be kept in view; viz., situation, loftiness, the due width of stalls, and a proper declivity of the floor.

Situation is a thing to which we are unable, very frequently, to attend: an elevated spot is always to be taken if possible: valleys and wet marshy ground are very prejudicial to the comfort and health of the horse: all low situations are apt to exhale a moist and chilly air, which will engender rheumatism or colds, and at times even fever. The soil is also much drier on high ground than in a hollow.

Loftiness is particularly essential; it allows a freer circulation of air than when the building is low.

The size of the stable must vary according to the number of horses it is intended to contain. For half a dozen, forty feet in length by fourteen in width is as little a space as could be allowed for their use. The height should vary from fifteen to eighteen feet, although they seldom rise higher than twelve, and some not so much, especially when the loft is over the stalls.

In all cases it is necessary to plaster the roof or ceiling; in the first instance it prevents the admission of any currents of air; in the other, it keeps the bad at-

mosphere of a close stable from penetrating through the crevices of the boards, and this, in a great measure, preserves the hay or other dry food kept there, and which, by such neglect, is rendered highly injurious and unwholesome from the rank taste and smell it acquires.

The *width of the stall* should be about six feet, by no means less. There is but little flexibility in the spine of the horse, and great and irremediable danger has followed any sudden motion of turning the animal hastily in a confined space. Nine or ten feet should be the length, and the height such as to prevent them smelling each other.

Each stall should be furnished with a rack and manger; the manger should be eighteen inches wide, and two feet and a half in length. The common rack is made with staves in the front; another method is sometimes made use of—the hinder portion of the rack is made of wood, and gradually slopes in an inclined plane towards the front, terminating about two feet downwards; the lower portion of the front is entirely closed, the staves only being found in the upper part. By the use of this rack there will not only be a great saving of the hay, from the inability of the animal pulling it down upon the litter, by which means a vast quantity is often wasted, but the hay-seeds and dust will not be so liable to fall on the horse's head, to the frequent injury of his eyes.

The length of the halter should not be more than four or five feet, which will be sufficient to allow him to lie down with ease.

As regards the declivity of the floor, many stables have a descent highly injurious and inconvenient to the animal. It is true, that when the paving slopes considerably the urine will flow more readily from the

litter, but the injury done to the ligaments of the joints and the flexor muscles of the legs, by being kept continually on the stretch, is not easily remedied.

"The pain of this position," says Mr. Lawrence, "may be easily ascertained by any one standing a short time with his toes higher than his heels, in which case the calves of his legs will be so much affected as to satisfy him of the truth of this observation. Hence, when the horse is not eating, he always endeavours to find a level standing, either by placing himself across the stall, or by retreating as far back as his halter will allow, so that his hind-legs may reach the opposite side of the channel. He is also obliged to balance himself by standing with his fore-legs farther under his body, which gives him a bad habit of going; and also by removing the pressure from the heels to the toes, tends to increase that contraction to which the feet, in the stable, are always more or less disposed. The hind-legs, too, are always more inclined to swell from this circumstance, and the horse when lying down frequently slips backwards in such a manner, that, being at the utmost length of the halter, he is unable to rise on his legs owing to the confinement of his head and neck."

The greatest inclination of the ground-surface of the stall should scarcely exceed half an inch in a yard, and this should be carried on to the gutter. Some, however, prefer a perfect level, in which case the urine may be carried off by means of a grating about six inches square, and this has communication with a drain under the surface. The floors of stalls is made of various materials at the option of the proprietor; the best is made of hard bricks, next to which lime-stone is preferable; these should not be less than a foot square. The method of flooring with oaken planks is very expensive, but some prefer it as more elastic, preserving

a more equal temperature, and not so readily broken by the pawing of the animal as stone or brick

The use of a litter is absolutely necessary, as preventing many diseases of the feet, and preserving a natural and necessary moisture. "We do not like," says Mr. Youatt, "the naked and uncomfortable appearance of the stable; and we cannot forget the difference in our own feelings, whether we stand for an hour or two on the hard stones or a soft carpet, and especially whether we beat our feet upon the one or the other. We are disposed to say that humanity and a proper care of the foot of the horse should induce us to keep some litter under him during the day; but his feet need not sink so deeply in it that their temperature should be much affected."

We must now consider another very important branch of the Stable Management, viz., the *Ventilation* and *admission of light* to the buildings, both of which are too frequently totally disregarded.

In a close stable, the air is not only hot, but impure; the circumstance of several horses being shut up during many hours with every breath of air excluded, contaminates the atmosphere; the very breath of the animals corrupts it, and renders it unwholesome; and this passes from time to time through the lungs, produces an imperfect digestion, stops the healthy course of the blood, and soon every function of life becomes deranged. In such cases, when the stable-door is first opened in the morning, a strong, bad, and oppressive smell rushes out; and as soon as the person enters, he finds a difficulty in breathing, which is sometimes so great that perspiration will follow. From this room the animal is shortly brought forth to his daily exercise: the natural consequence of such sudden transitions must sooner or later be disease.

It is observed, that " the effluvia of animal bodies, like all the other excretions, is constantly running into a putrefactive state, and this must point out very forcibly the necessity of a proper ventilation in stables, especially when it is considered that the dung and urine add greatly to the evil.

" But the desire of giving the horse a fine coat in winter induces those who have the care of him to keep the stable as hot as possible, by excluding, to the utmost of their power, the external air. As far as appearance goes, this custom has the desired effect; but the consequences are, that the animal is rendered more delicate, and more liable to catch cold whenever he happens to stand in a colder situation than that to which he is accustomed. Stables that are kept hot, and not sufficiently ventilated, are always extremely damp. This arises from the breath and the vapour of the horse's body becoming condensed on the surface of the walls and running down them in a liquid state.

When the moisture has remained for a certain length of time, it acquires an unpleasant and sickly smell, and which must be peculiarly offensive to an animal destined, in a state of nature, to be surrounded with pure and unwholesome air. In a state of health, a certain evaporation from the surface of the body is constantly going on; this is called the insensible perspiration. This vapour is absorbed by the surrounding atmosphere, and the quickness or slowness of the absorption will be in proportion to the change which the air undergoes by circulation. Thus, if the horse be exposed to the open air, the evaporation is much more rapid than when he is confined in the stable. This evaporation unloads the vessels of the skin, invigorates the circulation of the blood, and gives a general tone of health and spirit to the whole animal machine.

Upon this ground, therefore, the necessity of attending to the proper means of ventilation in the construction of the stable must be sufficiently evident."

It now remains for us to determine the best method of effecting an object so very necessary.

According to the size of the stable, and the number of horses kept therein, it will be found very convenient to have one or two large tubes, whose diameter shall not be less than six or eight inches; these are carried from the centre of the ceiling through the roof, and must be furnished with caps to prevent the rain beating into the building.

Where the loft is above the stall such a process of admitting air would not be practicable; gratings in that case may be used, and these must be placed sufficiently high to prevent the current of air coming directly upon the horse.

Another mode is to have windows fixed at equal distances and at a tolerable height; these are opened by means of pulleys, and answer the double purpose of ventilation and the admission of light: and on this subject it will be our duty next to expatiate.

Nothing is so detrimental to the eyes as a sudden transition from darkness to a glaring light, and yet this is heedlessly disregarded by very many who have horses under their charge.

It is well known, and, doubtless, most persons have experienced, the very unpleasant sensation of a mingled pain and giddiness, which is not readily dismissed, after emerging from a dark room or passage, and suddenly coming into contact with the light of an ordinary dull day, not to mention the greater glare when the sun is shining bright and full. Daily repetitions of this would gradually injure the eyesight, and very probably blindness would be the event.

It is equally the same with the eye of an animal, for that organ is alike tender; and in the horse's we may trace other evils arising from this carelessness or neglect; they have frequently become shy, and not unfrequently starters, from the effect of mistaking objects and their distance, during the period of this imperfect vision.

On the other hand, when much light is admitted into stables, the walls should not be bright; white-wash is too glaring. A dead, dull colour, is preferable.

Some paint all the wood-work of the building, and wash it carefully once in the course of three weeks: this is very judicious, and gives to the stable an appearance of cleanliness as well as neatness

We will close this subject with a few general remarks. At all times it is better to remove the litter before it has become tainted, than allow it to be used too long to the prejudice of health and comfort. Nothing is lost by taking away any portion that has become bad and unwholesome, and adding a small quantity of fresh straw. Dung should likewise be swept away as soon as dropped, and the stables should be carefully washed at least once a-day; this is better done when the horses are at exercise. The custom of having a goat in the stables is not exploded. It is better not to admit any animals or fowls.

The farmer's horse requires but little grooming, nor such as are turned out to grass. The brush and curry-comb are highly necessary for horses kept in stables and worked only occasionally. Good rubbings promotes circulation of the blood, opens the pores of the skin, creates a healthy perspiration, and serves instead of exercise; further, without well grooming, no horse can be expected to have a fine coat.

In fair weather the horse should be cleaned in the

air, and not in the stable. When the animals are regularly looked to, the curry-comb need not be so immoderately used as some will constantly do. A brush will be much more effective.

Hand-rubbing at times, especially the legs of a tired horse, is very beneficial, and will often prevent disease.

Neatness is always requisite in stables, and in that case the appearance is more healthy and comfortable. Every article should be hung or laid in its proper place, and no pails should be left standing about the stalls.

Water should never stand in the stables before the horse drinks it; if the chill is to be taken off, the addition of a little hot water is preferable, and quite as easily done.

THE VARIOUS COLOURS OF HORSES.

Mr. Gibson, as well as many horsemen of the present day, entertained an opinion that not only was much of the beauty of the animal linked with his being of a good colour and well marked, but that certain colours or marks denoted his good or bad qualities. An old adage asserts that "a good horse cannot be of a bad colour," and a little reflection will soon convince us of this, for daily observation will prove that frequently the most handsome and sightly horses are affected with vices, while such as are badly marked, or have no particular colour, have qualities which make the owner unwilling to dispose of him. Mr. Gibson's opinion on this subject is as follows:—

"The *Bays* have their name from the semblance their colour bears to that of a dried bay-leaf. These horses generally have the tail and mane black, with a dark streak down the back. The shade, however, varies considerably. Dark bays have also their knees and pasterns black; while others have the whole of the lower portion of the legs this dark colour. Some light bays incline to a brown, and are more or less dappled.

"The *Chesnut*.—Of this colour there are many good horses, and their appearance is generally extremely beautiful, especially what is termed the true chesnut, which admits of no variety of shade, and this happens when the coat is compounded of three tints—the root of the hair is light, the centre dark, and the extremity of a pale brown. There are, however, degrees lighter or darker: such horses as have white or party-coloured legs are not so handsome as those of the one colour. The beautiful chesnut-tint approaching to the fallow-colour looks remarkably well.

"The *Sorrel* differs in this from the chesnut, that the colours are so intermixed, and a reddish tint often predominates, having the appearance of a fox-colour. Such horses are often bald over the face, and the tail and mane is of a sandy hue. It is generally believed that those horses which have much white about their limbs are faulty in the feet and tender in constitution; hence the chesnut is preferable in most instances, whether for beauty or goodness.

"The *Brown* is thought inferior in beauty to the bay or chesnut. The shades of this colour are various, the manes and tails of such horses are generally black, as also their joints. Brown horses grow gradually lighter towards the belly and flanks; and many are light and mealy about the muzzle. The stout and

serviceable horses used for draught are very often of this colour.

" The *Black* horses of a jet and shining black, with little or no white, are very handsome. Too much white greatly detracts from their beauty. English horses have much more white than the black horses of any other country. The marks of these horses vary considerably; those which are composed of brown are esteemed constitutionally strong. Mr. Gibson considered the English black-horses, especially of the cast kind, not so hardy as the bay or chesnut.

" The *Greys* have the greatest diversity of colour. The dapple-greys retain their colour longer than any others, and this being considered the sign of a strong and healthy constitution, they are the most esteemed. The iron-grey looks well, but wants the requisite just named. The silver-greys are extremely beautiful and good. The nutmeg-greys, especially when the dapple mixture partakes of the bay or chesnut, are not only beautiful, but are generally very hardy and serviceable.

" The *Roan* participates of many colours, with a preponderance of white; where the intermixture is of the bay or nutmeg the horses are sometimes handsome. There are, however, a great variety of these, but most of them are better and stronger than their appearance bespeaks them.

" The *Strawberry* is not materially different from the roan or the sorrel, having a semblance to both, being generally marked with white on the face and legs; where there is a mixture of bay, the horse is frequently handsome and good: these, however, are not very common.

" The *Dun*, the fallow-colour, and the cream, are not unlike each other, and are generally found with a

list down the back, with their manes and tails black. Dun-horses are often very useful, and are mostly taken by the country-people. The mouse and lead-colour are the most ordinary; these have a list on the back which goes off into a soft shade, as the back of the eel, and, on that account, acquire the name of 'eel-backed.' The cream-coloured horses are often very good and beautiful. The royal stud of this description are bred in Hanover, and appear to be a distinct breed from the rest; their manes and tails incline to the chesnut; the pupil of the eye is red, like the ferret's, with a white iris. The tawny-dun is tinted with darker shades, and is occasionally dappled: these, when well matched, look very well."

There are several other coloured horses, as the flea-bitten, peach-coloured, &c., but these are not very common. Germany has horses of a very peculiar breed, spotted with black, red, yellow, and other colours: these sell more for curiosity, or are reserved as presents to great men, for they seldom possess any peculiar excellence. The snow-white palfrey from Spain, and not exceeding the Galloway in size, is nearly extinct. The pied-horses are such as have a mixture of white with some other colour; they are not generally esteemed as hackneys, nor in the team, being more used for light carriages. White legs and feet are always weaker than those of any other colour.

ON BREEDING.

In the early part of the spring mares generally come into heat, and the average time of their going with foal

is generally eleven months, sometimes more and sometimes less, according to circumstances. May is the month from which ages are always dated. The most material thing to be observed in breeding is the quality of the sire and dam, for peculiarity of form and constitution is inherent, and descends from generation to generation; hence the necessity of attention to those niceties which breeders are often apt to forget and pass over; nor is it sufficient that one of the parents be good and the other but indifferent, for the perfection of the sire may be lost through the deficiencies of the mare, and vice versa.

In the selection of a stallion many things should be observed. There should be general uniformity and compactness in every part, without an atom of superfluous weight or size of carcass. The height should depend upon the occupation the foal is destined to fulfil. The legs should be particularly examined, and disease should pervade no part of the system. Fat, heavy horses, with thick legs, and coarse unseemly heads, should always be avoided. Horses that are blind, or broken-winded, must be shunned. Temper is an essential point, for vice is frequently hereditary, and when this is carried to any extent it more than outweighs other good qualities. Stallions which cover for small sums of money are not generally to be trusted; the price is often a temptation to many who are unwilling to give much, and the consequence is, they are brought to cover too many mares in a season, and as the period advances their stamina fails, and their produce is often weak and small in proportion to the excess of exertion they have undergone.

As regards the mare, it is now better understood that the dam contributes as much, or perhaps more, to the production of a healthy stock than the sire. It

is essential that she be in full possession of her natural strength and powers; the form should not be defective, nor should there exist want of blood: the absurd idea of having a big-bellied and long-backed mare, is, or ought to be, exploded. The vigour of the constitution determines much more in favour of the foal than the size of the dam's belly. It is a great error to suppose that a mare that has once been good, and capable of great exertion, should, when old, and no longer fitted for ordinary work, produce offspring equally efficient as when in her prime; the foal must inherit some of the weakness of the present nature and broken-down constitution. Mares will breed at four years old; some call in the stallion at three; but when two years only are allowed to elapse, the system should be reprobated for many reasons: strength and beauty at such an age must still be absent; and thus not only is the dam rendered inefficient sooner than another that has been allowed to run longer, but the foal can never be expected to be either healthy or strong in constitution. One month after foaling the mare may be put to the stallion; although nine days will sometimes suffice, yet this is generally deemed too early, as the dam is necessitated to nourish two offspring at the same time, which is excessively weakening, and liable to injure one or other of the foals.

The sign of a mare being in heat is the ejection of a viscid whitish lymph, and the inflation of the lower portion of the vulva; she neighs frequently, and exhibits great desire for the horse: when she has conceived she shows no further desire, and the fluid stops, which is generally a certain sign. The sixth month decides, when she should be allowed good substantial food; two feeds of corn every day. At this age abortion is liable to occur; hence great gentleness and care should be

exercised towards them. Moderate exercise is also essential; but when the mare is used in harness it is very dangerous to use her on bad roads, or to pull heavy or dead weights. When the period of foaling draws nigh, she should be separated from other horses; and in the act of bringing forth, nature generally performs the operation infinitely better than when human aid is called in; but in some cases there may exist a little difficulty, and an apparent uneasiness and unusual labouring, then assistance is useful, but even then it requires some judgment. Having foaled, turn the mare into a fine pasture, in which there is a shed to shelter her if the weather comes on wet. The foal may be weaned at five or six months old. Although it is known that mares take the horse early after foaling, the breed is much finer, and the mare herself retains her vigour and utility much longer, when put to the stallion only every other year.

Disproportioned copulations are also bad, as a large horse and small mare; the size of a horse should be produced by gentle gradations, and this is evidently a better way to arrive at beauty as well as strength.

Breeding in and in, as the term is, proves a sure mode of procuring improvement. That is to persevere in the same breed, and making selections of the best on both sides. Much judgment and circumspection is necessary at all times in crossing the breed, and many errors and faults arise from the carelessness or ignorance of breeders in tnis respect, whose only ambition is to procure a colt that they may shortly sell at seventy or eighty guineas; and, failing in this, without any thought they still return to the same system, never giving a moment's reflection or forethought as to the cause of their first disappointment.

Mares which have once slinked their foals are very

liable to a recurrence of the same; and when one mare suffers abortion, if there are others in the same field they are likely to undergo the same.

ON THE REARING OF COLTS.

It is highly important that during the period the foal is with the dam she should be well fed, as by stinting, the growth and strength is at this period easily arrested, and errors of this kind are not afterwards to be remedied.

As the foal acquires strength of limbs it should be allowed to follow the mare during the periods of exercise or work. By this method it becomes familiarised with surrounding objects: the grooms and persons about the stable should also show great kindness towards it, and caress it; by these means it soon acquires the habit of being handled, and will not exhibit signs of fear when persons approach it. At four months old the legs may be occasionally lifted up, and the feet may soon after be gently hammered; this will introduce it to the future habit of shoeing.

While the foal is weaning, which generally takes place at six months old, it is better to put it into a stall for some time, or, as some recommend, a rick-yard, where the dam is not in the habit of going; here the foal will find both food and shelter. At this period, and for some time after, good feeding is very necessary: bruised oats and bran will be very excellent provender. As soon as thoroughly weaned, it should no longer be housed, but put into a pasture where it can feed at pleasure, and can shelter itself in a hovel or shed when it rains.

The halter may soon be put on, and it should be occasionally led, and then tied up; grooming and dressing must be sometimes practised; and thus, by degrees, it becomes associated with every thing to which it is destined as age and strength advance; it also, by this steady process, becomes tractable, and does not lose its temper, which is a most essential point in the value of the horse.

At a year old, the colts and fillies should be separated until the former are castrated.

On the operation of castration, which takes place after the colt is six or seven months old, mention has been made at page 180.

When about two and a half years old, the two front teeth are shed. The colt at this period should have bran-mashes with hay cut like chaff, for the loss prevents their eating the grass as ably as heretofore.

When colts do not thrive, and their coats stare, and they are given to be hide-bound, the following ball may be used:—

Socotrine Aloes	-	-	-	4 drachms,
Castile Soap	-	-	-	2 drachms,

mixed.

When worms is the cause, which is easily told by the appearance of whitish-coloured powder around the anus, twenty grains or more, according to the age, of calomel, may be administered on the night preceding the giving of the ball.

ON COLT-BREAKING

The colt having been by degrees handled, haltered, led to exercise, and tied up, the bit having been occa-

sionally left in his mouth for some time, and, finally, having become familiarised to every portion of the harness, the next essential object is to teach him to move properly, to obey the voice and motion of the rider or driver, and to regulate his paces: this is termed "breaking in," and is oftentimes a most tedious and irksome job; and consequently requires a very sweet and mild, but determined temper, to overcome the many difficulties attendant on the operation.

Patience and kindness will generally prevail, when roughness and barbarity ruins the animal for ever; the whip is sometimes necessary, but it should always be used judiciously and gently.

Never allow the horse to appear to have obtained the mastery; it is in this instance that energy, patience, and determination is requisite; once lose this point, and as much harm is done, at least, as regards your own management of the horse, as by cruelty and barbarity.

All the early lessons should be inculcated by kindness and caressing. In the after parts of the education, the whip is often judiciously called into action; but harshness will undo much that has already been favourably overcome, and obstinacy or vice may ensue.

The colt is first led with the cavesson, which is attached to the head-stall and buckled round the nose; gentleness is very requisite in the use of this instrument, being very severe. The bones of the nose have sometimes become diseased through the pressure and bruising it has endured; especially from the violent and sudden jerkings of an impatient or irritable breaker.

A long rein is then put on, and the first lesson may be given. A person following at a convenient distance.

occasionally showing or cracking the whip but never attempting to use it.

The colt, after walking quietly and steady, may next be tried in the ring, and walked round, right and left, in a moderate sized circle: never allow him to break into a trot till he has first acquired a steady and certain pace in walking. All lessons at first must be short, and each pace kept distinct from another; good temper, docility, and improvement, being always rewarded with caresses and a few handsful of corn. The length of the rein must be increased by degrees, and the pace gradually quickened.

The trot is next to be attempted, when something may be loosely attached to the clothing or trappings, this will accustom the colt to the flaps of the saddle and the skirts of the rider's coat.

Most horsemen speak very highly of the lessons in a circle, among whom, that noted sportsman, the Duke of Newcastle, remarks in his treatise on horsemanship, that it is the best method of giving ease and pliancy to the shoulders; and this is, without doubt, an opinion well founded.

When in the circle, his inside and outside legs move in two different circles of different diameters; that on the outer side being the largest: it consequently follows that the outside legs pass over more ground than the inner ones; hence, also, a greater extension of the shoulder and fore-leg is required. In this lounge, the horse inclines his body inwards towards the centre of the circle; and in small circles this inclination is to an extent that would cause the animal to fall on his side if he were to move in a straight line.

The motion of the inner legs are accordingly shortened, and come to the ground sooner than the outer legs: thus the joints acquire a greater pliancy in the

bending, and the limbs are elevated nearer to the body.

The canter and the gallop are the next to be taught, as also the motions of turning and breaking from one pace to another at the option of the rider: these will be discussed in the next subject. Ambling is a pace that should never be allowed, and the sooner the horse is broke of it the better: it is performed by moving a fore-leg and a hind-leg of the same side at the same time, and does not appear to be a natural motion, although in some countries, and especially the east, it is preferred to the walk or trot, as giving less motion to the rider; it is, however, by no means so safe as the natural paces: many horses amble at the rate of six or seven miles an hour.

The Earl of Pembroke recommends, in his admirable treatise on military equitation, that when horses carry their heads low while in the lounge, (which is frequently the case), a cord should be buckled to the top of the head-stall, passing from thence through the eye of the snaffle into the hand of the person that holds the lounge; and this must be slackened or drawn tight as circumstances require.

No horse should be suffered to advance one step with a false gait, and his head should not be tied up for any length of time, for this would give him the habit of leaning on the rein and throwing himself heavily on his shoulders when he grew tired: too much work at this time frequently makes the horse vicious.

When the bit is used, it should be both large and smooth, and the reins carried back to a ring on either side of the pad, rather slack at first, but gradually tightened: the twisted, sharp, and cutting bits, only tend to harden the mouth and render it callous to all feeling.

Working in hand, is the process to which the horse must be next broke; and though in reality by no means difficult, it is what few people can accomplish with success; a quick eye, a steady, but active movement, and a good and persevering temper being required. The horse's head is bent inward by means of a strap, tied from the side-ring of the cavesson to the ring on the pad: trotting is the pace that should be first used in this. In the use of this strap the eye is apt to be chafed, to prevent which, a strap and buckle is attached to the head-stall under the throat; thus the strap may be used as tight as the breaker deems fit, and no damage can happen to the organ of sight.

When the horse leans on this bending-strap, remove the cavesson, and use in its place a long cord, attached in the first instance to the ring of the pad, and carried thence through the eye of the snaffle.

THE TURKISH HORSE.

These horses are principally an intermixture between the Arab and Persian, some of which are very fine, and have been noticed by numberless travellers. When imported to England, they have occasionally improved our breed materially. Slade, in his travels, gives us the following account of the Turkish stable-management, and at the same time praises the animal:—

"Large apertures in the walls, and the roof constantly admitting the air, it being a principle with the Osmanleys to keep their stables cool, covering their horses with thick clothes; and as no country presents greater variety of climate than Turkey in Europe, no

horses being so healthy as Turkish horses, it follows that the mode adopted with them is good—spacious, well-ventilated stabling, with plenty of body-clothes. Horses in Turkey never stand in straw, but on the earth or sand, kept very clean, and are always tethered. The practice of tethering is worthy of imitation everywhere, it does not distress the animal, and it prevents his kicking; nothing is more unpleasant than being between two rows of loose heels. 'Extremes meet,' is exemplified in the contrary practice of the English and Turks respecting horses, the result of each being the same—excellence. English stables are hot, Turkish stables are cold; English horses are high fed, Turkish horses get little else than chopped straw; it requires hours to dress an English horse, as many minutes suffice for a Turkish horse; the English snaffle would scarcely hurt a deer's mouth, the Turkish bit would break a tiger's jaw; the hoof in England is prepared to fit the shoe, the shoe in Turkey is fashioned to the hoof."

THE ARABIAN HORSE.

THERE are three different breeds of horses in Arabia;—the Kochlani, which is the most valuable, and on these the Arabs mostly pride themselves; the Kadischi, a species of mixed breed; and the Attechi, which are the least esteemed of all.

The Kochlani, are principally found among the Bedouin tribes, and are not generally to be obtained under a very high price, especially the mares. All authors have vied with each other, not only in de-

scribing the many exterior beauties of this animal, but likewise few have met with the Arab horse who could not bear testimony as to his docility, speed, and courage.

Mr. Frazer, in his "Tartar Journey," thus describes the excellencies of them:—"I am tempted to mention to you one feat of an Arab horse, the property of a person who has more than once been mentioned by me in my letters, Aga Bahram, and which has not, as far as I know, been ever doubted. This animal came from Shirauz to Tehran, 520 miles, in six days; remained there three days, went back in five; remained at Shirauz nine, and returned again to Tehran in seven days. This same gentleman told me he had once rode another horse of his own from Tehran to Koom, twenty-four fursuiks, or about eighty-four miles, between the dawn of a morning near the vernal equinox, and two hours before sunset—that is in about ten hours. This, too, is good going; but Aga Bahram always has the best horses."

To show the estimation in which these horses are held by the Arabs themselves, numberless anecdotes are related; and poets of all nations have emulated each other in tuning their praises. The following, from "Sketches of Persia," by Sir John Malcolm, will be found interesting:—

"An Arab Sheick, who lived within fifty miles of Bussorah, had a favourite breed of horses. He lost one of his best mares, and could not for a long while discover whether she was stolen or had strayed. Some time after, a young man of a different tribe, who had long wished to marry his daughter, but had always been rejected by the Sheick, obtained the lady's consent, and eloped with her. The Sheick and his followers pursued, but the lover and his mistress, mounted

on one horse, made a wonderful march, and escaped. The old chief swore that the fellow was either mounted upon the devil or the favourite mare he had lost. After his return, he found the latter was the case, that the lover was the thief of his mare as well as of his daughter; and that he stole the one to carry off the other. The chief was quite gratified to think he had not been beaten by a mare of another breed; and was easily reconciled to the young man, in order that he might recover the mare, which appeared an object about which he was more solicitous than about his daughter."

Of all the numberless stories, (which in very sooth might be termed *legion*), of the affection entertained by man when in the desert, and dwelling under the warmer sun of a tropical clime, for these valuable creatures, I shall introduce but two; one is very generally known, but may not be found unworthy of record in a treatise on the horse. "The whole stock of an Arab of the desert consisted of a mare. The French consul offered to purchase her in order to present her to his sovereign Louis XIV. The Arab would have rejected the proposal at once with indignation and scorn, but he was miserably poor. He had no means of supplying his most urgent wants, or procuring the barest necessaries of life: still he hesitated. He had scarcely a rag to cover him, and his wife and children were starving. The sum offered was great; would provide him and his family with food for life. At length, and reluctantly, he consented. He brought the mare to the dwelling of the consul—he dismounted—he stood leaning upon her—he looked now at the gold, and then at his favourite—he sighed—he wept! 'To whom is it,' said he, 'I am going to yield thee up? To Europeans, who will tie thee close—who will beat thee—who will

render thee miserable! Return with me, my beauty! my jewel! and rejoice the hearts of my children!' As he pronounced the last words, he sprung upon her back and was out of sight in a moment."

The other is detailed by Major Denham, the celebrated traveller into the interior of Africa, and is not so universally diffused as the former, but gives us a pleasing example, in which not only the wild, untutored Arab, but also the more enlightened European, has acknowledged the attachment these horses inspire from their utility, mildness, and sagacity. This horse died in the desert.

"There are few situations in a man's life," says this author, "in which losses of this nature are felt most keenly, and this is one of them. It was not grief, but it was something very nearly approaching to it; and though I felt ashamed of the degree of derangement I suffered from it, yet it was several days before I could get over the loss. Let it, however, be remembered that the poor animal had been my support and comfort; nay, I may say companion, through many a dreary day and night; had endured both hunger and thirst in my service, and was so docile, that he would stand still for hours in the desert while I slept between his legs, his body affording me the only shelter that could be obtained from the powerful influence of a noon-day sun; he was yet the fleetest of the fleet, and ever foremost in the chase."

Such, then, is the Arab horse, which for every quality estimable in that animal, surpasses all that are found in every other portion of the globe. When young, they are trained in the tents of their masters, and are found lying down to rest, and feeding in the same habitation, with the rest of his family, and oftentimes serving the purpose of a pillow, on which they rest their heads;

hence their docility and evenness of temper. In the symmetry and beauty of their make consists their swiftness, occasionally travelling eighty, at other times one hundred and twenty miles, without stopping; and from the general nature of the country in which they are reared, together with the frequent scarcity of provisions, constitutes in them that sagacity, endurance of hunger and fatigue, and their great courage, which always has and ever will render them valuable while one of the breed exists.

The Bedouins appear as kind and gentle to the brute creation as they are to one another, and their fond attachment to their horses is proverbial. D'Arvieux tells us a most interesting story of an Arab who had been obliged to sell his mare, making very frequently a long journey to come and see her. "I have seen him," says he, "cry with tenderness, whilst kissing and caressing her. He would embrace her, would wipe her eyes with his handkerchief, rub her with his shirt-sleeves, and gives her a thousand blessings. 'My eyes!' would he say to her, 'my soul! my heart! must I be so unfortunate as to have thee sold to so many masters, and not to keep thee myself? I am poor, my antelope! I have brought thee up like a child; I never beat nor chid thee. God preserve thee, my dearest! Thou art pretty—thou art sweet—thou art lovely! God defend thee from the looks of the envious!'"

EGYPTIAN HORSES

There is no breed of horses especially particular to Egypt; all that are there being generally importations

from the neighbouring countries of Arabia, Dongola, &c.

There is a curious circumstance related by Burckhard, touching the manner in which the Egyptians set about breaking a horse in the habit of biting.—"I have seen vicious horses in Egypt cured of this, by presenting to them, while in the act of doing so, a leg of mutton just taken from the fire. The pain which a horse feels in biting through the hot meat, causes it, after a few lessons, to abandon the vicious habit."

THE PERSIAN HORSES

Have been celebrated for ages. Ancient history makes frequent mention of the speed and excellence of the Parthian cavalry, and that nation used to propitiate the deity by sacrificing a Persian horse. They were always in great requisition, and it would seem furnished the east ages before the Arabian horses were known, or perhaps existed. They show much blood, and are taller than the Arabs, but this may arise from the good pasture that is found in many parts of Persia. The present race of horses in that country has not degenerated from days of yore.

In Turkistan there is a breed denominated Toorkamans, some of which, especially those of pure blood, are held in equal estimation with the Persians: not from their beauty or appearance, but from the speed and inexhaustible spirit and courage they display under the greatest fatigue. At first, their superiority is not apparent, but on trial, their valuable qualities are fully displayed, and some have been purchased at three hundred pounds a-piece.

The horses of Circassia are many of them very excellent, especially such as belong to persons of distinction. These are marked on the buttock with a hot iron, and it is accounted a capital offence to mark in the same manner one of the common horses of the country. They are valuable not only for swiftness and strength, but they are exceedingly beautiful, the finest being known under the name of Shalokh, and are the property of the prince.

THE EAST INDIAN HORSES

Are originally from Persia and Arabia. A breed between the Toorkaman and Persian is much esteemed for beauty, speed, and spirit. There are many others of inferior note. Many horses in the East India Company's studs in the different presidencies, are remarkably fine and strong animals; their chief faults are fulness of the hocks and a deficiency of bone below the knee. Many horses have been recently imported from Australia and the Cape, which are very strong and superior.

THE CHINESE HORSES

Are inferior to all other breeds in the east, being void of strength or beauty, and no traveller or resident has ever been known to speak favourably of them in any one instance.

THE BURMAN HORSES.

The horses in Burman are generally of Indian breed, no notice being taken of their own. In the provinces of Pegu a remarkably-fine pony is reared, and these are much esteemed in India and the east. Though small, they will travel day after day many miles; they are most untiring animals, and display great spirit, strength, and perseverance.

THE TARTAR AND COSSACK HORSES.

In the immense plains of Tartary are found innumerable herds of wild horses. Their mode of ranging about is curious. Two stallions congregate a number of mares, and thus they travel from pasture to pasture. When foaled, the young stallions, as soon as they are grown up, are driven from the herd, and after straggling about for some time, and having acquired sufficient strength, they form herds of mares for themselves. The Tartars live on the flesh and milk of their horses. The Cossack horses are strong and large, but void of beauty: they are admirably adapted for the service in which they are employed. Their Russian general, Platoff, when he visited England, rode a horse of this class, which was twenty years old, and had been in the severest campaigns; he was still strong and active: at the same time, a Cossack follower of the general sold his horse for one hundred guineas. In 1825, a race was set on foot between two English thoroughbred horses, and some of the best breed of Cossacks:

the distance was about forty-seven miles. The English horse (Sharper), carried off the palm; the other (Mina), fell lame. In Ukraine, Tartary, the wild horses are rather unmanageable, and not easily tamed. Their food is exposed for public sale. The foal's flesh is very tender, and as white as veal. The older animals eat very like beef.

THE AFRICAN HORSES

Are not held in such estimation as those of Asia. Some in Dongola are mentioned by the traveller Bosman, who reckons them as fine and symmetrical as any in the world, and particularly swift in their motions: one of this breed was purchased at Cairo for a sum valued at one thousand pounds sterling.

In central Africa there are herds of wild horses, as in Tartary. The kingdom of Barnon has a fine specimen, of which travellers speak in high terms. In the northern provinces, the Barb is much esteemed; in form and beauty his is superior to the Arab, but wants his courage, perseverance, and speed, nor is he so tall, being seldom more than fourteen hands high. The Barb first contributed to the excellence of the European studs. On the east and west coast, the horses are generally weak, small, and vicious. Towards the south, and in the Cape colony, the breed is excessively superior, and the horses very fine, strong-built, and handsome: many are exported hence to the East Indies. The great African traveller, Mr. Bruce, after speaking of the horses of the country, and the pertinacity of the inhabitants, in asserting that they are all

sprung from one of the five on which Mahomet and his successors fled from Mecca to Medina, on the memorable occasion of the Hegira, thus states the difference in the customs of the Africans and Arabs :—

" No Arab ever mounts a stallion : on the contrary, in Africa they never ride mares. The reason is plain : the Arabs are constantly at war with their neighbours, and always endeavour to take their enemies by surprise in the grey of the evening, or the dawn of the day. A stallion no sooner smells the stale of the mare in the enemy's quarters, than he begins to neigh, and that would give the alarm to the party intended to be surprised. No such thing can ever happen when they ride mares only. On the contrary, the Funge trusts only to superior force. They are in an open, plain country—must be discovered at many miles distant—and all such surprises and stratagems are useless to them."

THE AMERICAN HORSES

Appear to have been of European extraction : in the States, the breed is generally a mixture of the French and English ; however, many of the best English blood-horses are found in some of the provinces, and the breed in Virginia, and the Jerseys, is preserved unmixed. The American trotters are often of Canadian origin, and these again sprung from the French breed. The wild horses of South America are very numerous, herding together frequently to the number of ten thousand, and oftentimes they prove very dangerous. They seem to be of the Andalusian and Spanish breed.

The inhabitants take them with the lasso. Herds of wild-horses are sometimes found in the island of St. Domingo. Horses are not known in the islands of the Pacific. Wild horses are not equal to the domesticated ones in beauty, strength, or rapidity of motion.

THE SPANISH HORSES.

The Spanish horse of the present day is of a very inferior description; and most travellers view them in the same light, being defective in every point which determines a good horse. In the days of chivalry and romance, the Andalusian war-horse was particularly famous. The introduction of the Barb into Spain, after the conquest of a great portion of that country by the Moors, served materially to improve the breed. The Spanish jennet was also very celebrated, but now there are few to be found in the country superior to our half-bred horse.

THE FRENCH HORSES,

Like our own, have of late years been considerably improved, but they have not yet reached our excellence in speed, strength, or beauty. Normandy has many very fine draught and cavalry-horses; and many of the French troops are mounted from this part. The ponies of Poiton are well known, and some excellent hunters are bred in Limonsin.

THE ITALIAN HORSES.

These, like the Spanish, were once esteemed; the Neapolitan horses are the only ones which have at all retained any portion of their reputation; and this is mainly by means of the English horses which have been taken thither. The common breed of Italian horses are but very indifferent. Racers are occasionally introduced in this country, but on a very different style to those of England.

THE FLEMISH AND GERMAN HORSES.

The Flemish are large, stout-built, and very excellent draught-horses, and have been very much used of late years in this country to improve the breed. The German horses, which were once noted as very heavy and slow, have recently been bettered by the intermixture of English and eastern blood. Hanover and Holstein produce very fine cavalry-horses; the latter place furnishes the greater portion of the Prussian army; these horses are strong, active, and of good size; their action is very grand and stately, and present a noble front. The horses in Hungary are remarkably light and fast in their movements.

THE SWEDISH AND OTHER NORTHERN HORSES.

In Sweden the horses are small, but very spirited, quick, and beautiful. Russia gets her horses from

Tartary and the Cossacks, especially those for military service. Norway has a fine breed, particularly adapted to the country, and very sure-footed. The roads are generally very mountainous, and in ascending or descending the steep cliffs, these animals advance one foot gently to try if the stones be firm, and so proceed; if checked by the rider, he hazards his neck, and when left to their own management they will cross the most rugged pass in safety.

Finland contains small horses, which trot remarkably fast.

ENGLISH HORSES,

WHETHER for speed or strength are most excellent, and rank before those of any other country in the world. It cannot now be ascertained whence the original breed came, or at what period: some assert that the Welsh pony is the only race of this animal peculiar to Great Britain; yet the earliest mention we have of the British horse is in the wars with Julius Cæsar, when that accomplished commentator takes particular notice of our war-chariots drawn by horses; and taking into consideration the clumsy structure of these cars, the impediments to which they must sometimes be opposed, and the fury with which they were driven in an engagement, all bespeak the requisition of powerful and able-bodied animals; moreover, Cæsar transported many to Rome, which would not have been the case had they been weakly and small. At this time it would appear horses were very numerous in the island. The breed must have undergone many crosses,

as prince succeeded to prince in those unsettled times when the throne was insecure and uncertain, a Dane holding the sceptre at one time, and a Saxon at another.

Athelstan, the second in succession to, and the natural son of Alfred, devoted himself to the improvements in horse-breeding, and many edicts were passed in his reign, as also by Howel, respecting the value and usage of the horse, many of them very humane and necessary.

In that age a stallion was rated at thirty, and a mare or colt at twenty shillings.

When the Norman family came to England, still greater improvements were effected. Succeeding kings by degrees advanced the excellence of the various breeds. John imported a hundred Flemish stallions, and the third Edward purchased fifty of the finest Spanish horses. At this time Spain and Italy furnish the greatest part of Europe for military service.

Although Fitz-Stephen mentions the trial of speed between horses as early as the reign of Henry II., races were not established till Henry VIII. came to the throne. Barbary and Turkish horses were introduced, and James I. purchased an Arab for the sum of five hundred pounds. Succeeding princes, seeing the benefit derived from the crossing of breeds, and the utility of encouraging the production of fine horses, patronised the various sports and kept extensive studs; the subjects following the royal example, vied with each other, till at the present day the English horses have been brought to an excellence not to be equalled, much less surpassed.

Presean de Dampiere, speaking on this subject, after descanting on the superiority of the French climate, and their admirable establishments for breeding, never-

theless allowing the celebrity of the English horses, says—

"The crossing of the Arabian and other Asiatic horses with the English breed, and the further crossing of their produce with each other, has naturally produced a division into five classes, which are very distinct, and have been well preserved.

"The first is the Race-horse, proceeding directly from either an Arabian or Barb with an English mare that has been bred by a similar cross. This is what the English call their highest blood.

"The second is the Hunter, arising from a blood-horse and a half-bred mare. This class is very numerous; they are stronger than the first, and capable of undergoing greater fatigue.

"The third is the result of a cross of the hunter with mares of a more common description—these constitute the Coach-horses. It is from these two classes that the English export so many throughout Europe, and particularly to France.

"The fourth is the Draught-horse, the produce of the former with the strongest mares of the country. There are some of this breed of the greatest size, and in their form and character not unlike the horses which are seen cast in bronze.

"The fifth has no particular character, being the result of accidental crossing among the rest. Still, notwithstanding this mixture, the influence of the Arabian blood may be traced in some degree even amongst the most common sort.

"The English have procured Arabian horses, and have devoted the greatest attention and care to their system of breeding, particularly by publishing the genealogy of those which they considered as their best produce. They have well understood the importance

of this publication, for by these means they have been able to have recourse to stallions and mares that approached the nearest to the original blood, for the purpose of breeding, and thereby to preserve the breed from degenerating.

" Such is the state of breeding-horses in England, where they pretend that they have no occasion to return to Arabian horses; an opinion which appears to be founded rather on the estimation in which the English hold their own breed, or the fictitious value which they wish to put upon them, than upon fact."

It were needless to dwell any more in this portion of the book on the superior excellence and the numerous merits of the English horses; the subject is discussed at length toward the close. Suffice it to say, that our racers have beaten those of any other country in the world, whether at home or abroad. That famous animal Flying Childers ran over the Newmarket course, which is better than three miles and three-quarters, in the short space of six minutes and forty seconds; and Eclipse beat every horse that was ever opposed against him, and produced more than three hundred winners. Draught-horses have been known to draw three tons of dead weight; and in the northern districts the pack-horses usually carry a burden of four hundred pounds.

It may not be inadvertent to our matter to close this subject with a few anecdotes of this animal. Indeed we find both ancient and modern records equally lavish in their praise of the horse.

The great naturalist, Pliny, relates a marvellous account of the nation of the Sybarites training their horses to dance. When the inhabitants of Crotona went to war with the former, the Crotonian trumpeters were instructed to learn the tunes to which the horses were accustomed to dance; when these were acquired, they

played them on the battle-field, to the utter discomfiture of the Sybarites, whose horses became unmanageable, and so lost the day.

The following anecdote will at once illustrate the strength and sagacity of the horse :—

" A nobleman in the early part of the reign of Louis XV., having a very vicious horse, which none of the grooms or servants would ride, several of them having been thrown, and one killed, asked leave of his majesty to have him turned loose into the menagerie against one of the largest lions. The king readily consented, and the animal on a certain day was conducted thither. Soon after the arrival of the horse, the door of the den was drawn up, and the lion with great state and majesty marched slowly to the mouth of it, when seeing his antagonist he set up a tremendous roar. The horse immediately started and fell back, his ears were erected, his mane was raised, his eyes sparkled, and something like a general convulsion seemed to agitate his whole frame. After the first emotion of fear had subsided, the horse retired to a corner of the menagerie, where having directed his heels towards the lion, and having reared his head over his left shoulder, he watched with extreme eagerness the motions of his enemy. The lion, who presently quitted the den, sidled about for more than a minute, as if meditating the mode of attack, when having sufficiently prepared himself for the combat, he made a sudden spring at the horse, which defended itself by striking his adversary a violent blow in the chest. The lion instantly retreated, groaned, and seemed for several minutes inclined to give up the contest, when, recovering from the painful effects of the blow, he returned to the charge with unabated violence. The mode of preparation for this second attack was the same as the first; he sidled from one side of the

menagerie to the other for a considerable time, seeking a favourable opportunity to seize his prey, during all which time the horse still preserved the same posture, and still kept his head erect, and turned over his shoulder. The lion at length gave a second spring, with all the strength and velocity he could exercise, and the horse caught him with his hoof on the under-jaw, which he fractured. Having sustained a second and more severe repulse than the former, the lion retreated to his den as well as he was able, apparently in great agony, moaning all the way in a most lamentable manner. The horse wa soon obliged to be shot, as no one dared to approach the ground where he was kept."

The power and strength exhibited by the horse on some occasions have been prodigious. When the Croydon railway was completed, some gentlemen laid a wager that a horse could draw a weight of thirty-six tons the distance of six miles when thus assisted by artificial means. At Merstham, six miles from Croydon, twelve wagons filled with stones were linked together, making a weight of thirty-eight tons and a quarter; this a horse taken from the timber-yard of Mr. Harwood drew the specified distance in an hour and forty-one minutes. To prove this power was not gained by descent, the animal was stopped at four different parts of the distance specified, when he drew the wagons off again with tolerable ease: four more wagons were then added, when the weight became forty-one tons and a quarter; the horse set off again at the same pace: and to conclude, all the men around to the number of fifty were then desired to mount the wagons, and the animal still accomplished what was required. This last addition made the whole weight forty-five tons and a quarter.

It has not devolved on the moderns alone to discover

the wonderful strength and invaluable qualities of this noble animal. In days of yore both the sacred and profane writers were found to lavish their praises in admiration of the horse. In the book of Job there is truly a most sublime passage on his spirit and courage —"Hast thou given the horse strength? Hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men: he mocketh at fear and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear and the shield. He swalloweth the ground with fierceness and rage. He saith among the trumpets, Ha! ha! He smelleth the battle afar off, the thunder of the captains and the shouting."

Remarkable attachments have often been formed by these noble animals; the following incident may furnish an example:—"There were two Hanoverian horses which had assisted in drawing the same gun during the whole of the Peninsular war in the German brigade of artillery. One of them met his death in an engagement; after which the survivor was picquetted as usual, and his food was brought to him. He refused to eat, and kept constantly turning his head to look for his companion, and sometimes calling him by a neigh. Every care was taken, and all means that could be thought of were adopted to make him eat, but without effect. Other horses surrounded him on all sides, but he paid no attention to them; his whole demeanour indicated the deepest sorrow, and he died from hunger, not having tasted a bit from the time his companion fell."

Professor Kruger of Halle relates the following anec-

dote, displaying at once the fidelity and sagacity of the horse :—" Riding home through a forest one very dark night, a friend of his had the misfortune to run against an opposing branch of a tree ; this accident stunned him, and he fell. The horse returned to the house he had left, and all the inmates having retired to bed, continued to paw at the door till one of them rose, and wondering at this circumstance, determined to follow the footsteps of the horse ; and when he arrived at the spot discovered the object of the noble animal's solicitude, and immediately resorted to the necessary means to effect a restoration and the recovery of the gentleman who had been so unfortunately situated, and who would probably have died but for this speedy assistance."

In Cunningham's account of New South Wales, he says—" A friend of mine in the habit of riding a good deal, found that whenever he approached a gully his sagacious horse invariably opposed his wishes to cross at the particular spot he had been accustomed to, always endeavouring to lead off to another part of the gully, where no passage was known to exist by his rider. Resolving to see whither the cunning rogue would go, he gave him the rein, and soon found himself carried over the gully by a route he had never before followed. Still, however, thinking that the former way was the nearest, he was curious enough to have both measured, when he found the horse's judgment correct, that way being the nearest by several hundred yards."

One remarkable instance of recollection of injury and an attempt to revenge it, is, however, to be found in a work by D. Rolle, Esq., of Torrington, in Devonshire. A baronet, one of whose hunters never tired in the longest chase, once encouraged the cruel thought

of attempting completely to fatigue him. After a long chase, therefore, he dined, and again mounting, rode him furiously among the hills. When brought to the stable, his strength appeared so completely exhausted that he was scarcely able to walk. The groom, possessed of more feeling than his brutal master, burst into tears at the sight of so noble an animal thus sunk down. Some time afterwards the baronet entered the stable, upon which the horse made a furious spring upon him, and had it not been for the groom's interference, he would indisputably have prevented him from ever again misusing his animals.

THE MULE, ASS, ZEBRA, &c.

It will not be amiss to make a few remarks on those animals that assimilate most to the horse: the first in rank is the *Mule*—which abounds more in the continental portion of Europe, (particularly in Spain and Portugal), than in our island. This animal is produced either by the connection of the horse with a female ass, or the male ass with the mare. This last breed is the most useful; it inherits the small legs and handsome shape of the mare, and the long ears and cross on the back which is the characteristic of the ass: its peculiar value is discerned in mountainous countries, where its sureness of foot is not to be surpassed by that of any other animal: moreover, they are generally much more free from disease, certainly hardier, and retain their strength and spirit till old age. Nature denies to the mule the power of continuing its race.

The *Ass*—is to be found wild in many parts of the

world, especially Persia, Tartary, and some portions of Africa. Most ancient historians, and Xenophon in particular, mention the numerous wild asses of Asia: they are very difficult to be approached from an exquisite quickness of the organs of smelling and hearing; they are also very fleet, and defend themselves with great ferocity. How different when in a domesticated state! they are then all that is docile and tractable, will live very poorly, and yet thrive, but they are at all times very cleanly: they will drink none but the purest water, and avoid mud and dirt in the roads if possible.

The asses of Spain are supposed to be the finest in the world, next to which rank those of Italy; great portions of these two countries being traversed by mountains, the inhabitants have devoted much care and attention in the production of this animal. In Egypt and Arabia are frequently seen asses of very superior size and beauty.

The *Zebra* bears a close proximity to the asinine species, having the head and ears very similar to the mule in size, but the legs and loins are symmetrically small and beautiful: the regularity of the stripes and glossy smoothness of the skin adds greatly to the appearance. They are remarkably strong and alert, and can seldom be taken unawares.

The *Quggai*—is nearer to the horse in shape, though not so handsome as the Zebra; still they are fine-looking, strong, and admirably proportioned. Neither of these animals have been domesticated. Indeed, unless the Zebra were taken when very young, it has been found impossible to break their wild spirit.

It has been a question, whether either of these animals crossed with a thorough-bred mare, would not produce good racers? The experiment, however, has not been yet tried.

CONDITION.

Condition, as regards horses, is a term conventionally well understood; but beyond the precincts of the stable it is neither precise nor technical. The term, in common parlance, might be supposed to imply nothing more than the symptoms and appearances which usually betoken health. Thus, when a horse is in perfect health, he ought, under this view of it, to be considered in perfect condition; and on the contrary, when a horse is in any respect out of health, he should be considered as out of condition—that is, in a condition that neither fits him for perfect service to his owner, nor for perfect comfort to himself. But condition is used with a latitude of signification much exceeding this, and in its popular acceptation among horsemen is more comprehensive but less perfect in its meaning. Thus, a farmer rides a horse to market in full vigour, but from constant exercise he is out of flesh, or from being exposed to the air he may have a very rough coat; this horse with the stabularian would not be said to be in condition. And though he may be in a state to do every thing a rider ought to require of him, yet if he should pass in this state into the hands of a dealer, he must make some material alterations in him before he, the dealer, will pronounce him in condition, or before he can expect to sell him as such. Having, however, passed through some changes in his appearance, and being now termed by the dealer in condition, he would yet be found by the horse-amateur to want further alteration before he would be fitted to undergo severe exercise, or be in a condition to hunt, or even to work as a superior hackney. Supposing him to have undergone some further changes,

still, in this improved state, if he should pass into the hands of a race-jockey, his condition must again be somewhat altered before he can be considered as in condition to run. This conventional term, therefore, comprehends a variety of states and degrees, some dependant on the real necessities for alteration in the state of the animal according to the several uses to which he is applied, and others founded on an artificial taste relative to his exterior appearance. Condition in a cart-horse would imply with a healthy state of his hairy covering, fulness, and rotundity of frame generally, by which his exertions in carrying loads or drawing weights would be assisted. In the racer, on the contrary, in the hunter also, and, in a minor degree, in every variety of horse used for quick motion, fine condition would imply a state the reverse of fulness and rotundity.

Condition must, nevertheless, embrace some common properties in all. It requires such a state of the body, both internally and externally, as fits its various organs to act uninterruptedly for the benefit of the whole; and thus much it is evident as equally necessary for the heaviest cart-horse as for the fleetest racer. But in the lighter varieties, in addition to this, to be in condition expresses a state favourable to accelerated and long-continued motion, produced by condensing the greatest possible quantity of animal fibre, particularly of pure muscle, into the smallest possible bulk, and of promoting the absorption of the useless and hurtful incumbrance of the adipous and other intestitial matter, by which means we unite the grand desiderata of lightness of body with full strength and elasticity. This state, if accompanied with a sleek and healthy coat, may be considered as one of perfect condition; and it is in the attempts to produce such state that all

the art of training consists; but a total departure from nature's rules, by unnatural heat, deprivation of light, stimulating food, restraint from water, and excessive clothing, are not now as heretofore considered even in our racing-stables as the means best calculated to promote these ends; on the contrary, the light of truth and nature is forcing a ray through the almost impervious casements of these prison-houses. We must not, however, join in a popular outcry, and thereby stifle the experience of many years, and the evidence derived from that state of our racers which has enabled them to beat the stock from whence they sprang; nature, as we have innumerable proofs, may be improved by art as regards the powers of her creatures: nature gives due capabilities for all such purposes as are connected with the preservation and propagation of animals, and to these she confines her limits. The art of man now steps in, diverting nature from her course: he is enabled to enlarge particular powers, which he directs to particular purposes, at his will, but which inroad on nature is always found to be at the expense of some of the remaining qualities; and thus it is that speed in the race-horse is increased at the expense of the safety and duration of his progression. In the greyhound, also, the celerity has been improved by man, but scent has been withheld from the animal by nature as the improvement gained its maximum. As the rapidity of the race-horse has evidently been increased by artificial means, we are now led to consider him altogether an animal of art, and as such we also consider him as one whose powers can only be kept up by a continuation of means not altogether natural. That condition, therefore, which results from what is called training, it is more than probable is essentially necessary to the speed exhibited by the British racer

We may, without doubt, improve on the training process, and simplify it to advantage, but there is little doubt that we cannot wholly dispense with the aids derived from long practice and experience. I shall first proceed to a consideration of that want of a condition which may be viewed as the result of present disease, or of circumstances tending thereto, and afterwards shall touch on the process of conditioning the horse on his return from grass.

The accidental causes of morbid condition are various; a very common one is found in injudicious feeding, both as to quality and quantity. Any sudden alteration in the articles of a horse's diet will frequently, according to the term of horse-amateurs, throw him out of condition; such as removing him from the grass-field or the straw-yard, to a full allowance of dry hay and corn, with a scanty supply of water to draw up his belly; all of which are perhaps done at once without the smallest preparation. In these cases, the alimentary canal, being hardly yet in a state of digesting capacity, suffers from the increased powers necessary to draw nutriment from substances which, although in themselves more nutritious, yet are, in this instance, less digestible than those before in use. Thence follows costiveness, heat, and thirst, as well as an unhealthy state of coat, which stares and feels harsh and dry, being a necessary consequence of the ordinary sympathy between the stomach and the skin. A sudden remove from a generous to a poor diet is unfavourable to condition likewise; for in such case, the chyle, or nutritious pabulum, from whence all the vital organs are recruited, and all the vital energies derive their vigour, cannot be separated in sufficient quantities; the blood therefore becomes deteriorated, universal absorption takes place of the softer parts, which

produces lessened bulk, while a laxity of fibre in the remaining portions is productive of languor and debility; the quality of the food is also of considerable consequence to the condition. Mow-burnt hay, by exciting a partial diabetes, is very apt to throw a horse out of condition. Musty hay also, and oats highly kiln-dried, have an unfavourable effect on it also. The liquid aliments should likewise be attended to in a consideration of the condition. Mineral waters are unfavourable to it in most cases; although there is reason to believe that in some morbid affections they are salutary. Sea-water may be considered in the same light, but a continued use of the brackish water found near sea bathing-places is unfavourable to the condition of such horses as have not been accustomed to it, to which, in unison with the bad care taken of them at the livery-stables of the sea-coast bathing, I attribute the universal complaint of the ill-condition in which they so frequently return from thence. Badly-ventilated stables, excess of clothing, and deprivation of water, are also frequent causes of morbid condition, as I have often witnessed; for in some of these cases, after a course of purgatives, followed by alteratives and tonics, have failed, the more simple means of succulent food, a proper quantity, a well-regulated but perfectly cool stable, with a free access of air, and very moderate clothing, have created an immediate change. An inordinate quantity of exertion, particularly if continued unremittingly for several days, will often produce morbid condition, and this in cases where the feeding has been supposed equal to the tasks required. It is particularly likely to happen to young horses, and to such as have not been sufficiently prepared, in which cases it is clear that the stomach, participating with the general debility, has a

double task to perform in digesting a larger quantity of nutriment than usual to make up the increased wants of the constitution, and thus the evil is increased by adding the further deterioration of this organ to the others. I know of no state of morbid condition which often proves so obstinate as this, and which is often at last only to give way to a good salt marsh run. Drastic purgatives, or violent remedies, as the mineral acids, when injudiciously continued, produce the condition very quickly, and sometimes irrecoverably. Another principal cause of want of condition, is the alternation of heat with cold, a sudden check to the natural or acquired heat of the body, particularly if aggravated by the evaporation of a perspiring state and great previous exertion, as a sudden check after a severe burst with the hounds; this, if it should not bring on topical inflammation of some vital organ, yet frequently acts on the outer coverings of the body; the capillaries of the skin appear to become constringed, and the uncteous matter secreted by the sebatious glands seems either vitiated or lost, by which the elasticity and pliancy of the hide becomes lessened, and the hair, instead of lying smooth and appearing glossy, for want of the uncteous secretion, becomes elevated and feels hard and dry to the touch. The dandril or scurf adheres closely to the skin, instead of separating and falling in daily scales, and adds likewise its share to the general derangement of the outer expansion. I have already alluded to that consent of parts which is so apparent between the skin and the digestive organs, and that it follows in almost every instance when one of these becomes affected, the other takes on a morbid state also. From much observation, I am disposed to think that the sympathy between the skin and alimentary canal is so intimate, that they change the order

of attack as circumstances occur. Thus, when the skin is primarily affected the stomach becomes secondarily so, and vice versa. In the application of cold to the surface it appears clear that the primary cause originates with the morbid attack on the skin; and when we consider the structure and functions of this investure of the body, we need be at no loss to account for an inelastic or binding feel of the hide as one of the distinct marks of want of condition.

Hide-bound it may therefore be inferred is not to be considered as being in itself a specific disease, but, on the contrary, as a symptom only, common to any state which deranges the secretory, and perhaps, also, the excretory, functions of the skin, and it thus accompanies by a common consent of part most chronic affections of long standing. A long-continued gleet from the nasal membranes in glanders will produce it; a local attack of farcy on the hinder extremities brings it on; and the integumental affections of cracks, grease, and mange, claim it as a companion also. In fact any means which are capable of producing an absorption of the cellular and membraneous medium between the skin and muscular expansion by which its motions are regulated, binds it down so firmly to this fleshy panical as to confine its extension and destroy its usual elasticity.

The treatment of hide-binding must necessarily therefore blend itself with the general treatment of morbid condition. The primary affection of the skin is not always, however, confined to an elasticity of the hide nor to the staring of the hair upon it, for sometimes, from a kind of reaction and process in the deranged and obstructed vessels, small tumours become formed, generally extending pretty universally over the skin, which affection has received the name of Surfeit.

Surfeit, which is likewise considered as a distinct

disease, is usually a symptom only, being generally dependant on a primary affection of the skin. In a few instances I have, however, traced its origin to a deranged state of the stomach, brought on by eating noxious vegetables, and in some other instances it has been produced by the musty quality of the hay used. The treatment of surfeit, as well as of hide-binding, must therefore follow the principles applicable to ill-condition in general.

Moulting, though a natural process, frequently produces much derangement in the system, and thereby affects the condition often. This is usually more sensibly felt at the autumnal than at the vernal shedding, for the production of a long coat must naturally call forth more powers of the constitution than a short one. During the process of moulting, the vessels of the skin are in a state of increased action for the purpose of forming a new growth of hair, and as such all the effects of slight fever are present. Horses are then weak, sweat easily, are chilly, suffer from thirst, and are irritable and low. Moulting, therefore, more or less, puts every horse out of condition, and in the early part of the hunting-season the inconvenience of this is scarcely felt. At such times it is prudent not to dress horses much, particularly with the curry-comb, that the old coat may not be too quickly forced off before the other is ready to replace it. Warmth both in the clothing and in the temperature of the air is salutary. Plenty of tepid water should also be given; the exercise should be moderate, and the food liberal, but by no means too heating. Succulent food, carrots, potatoes, &c., may therefore with propriety alternate with the corn given at these times.

The cases in which a defective condition is primarily seated in the alimentary canal have been already hinted

at. It may be further remarked on it that here also some symptoms are mistaken for original and distinct diseases, among which stands the old affection of the mouth called *lampas*.

Lampas is a symptom of that derangement of the stomach and its recipient passages which sometimes follows, and sometimes precedes, the binding of the hide, an unthrifty and staring coat, &c. &c. Its treatment must therefore fall under the remedial plan detailed for the removal of morbid condition.

Ragged Teeth.—Not unfrequently in old horses the teeth become unevenly worn, and now and then actually decayed, in which cases, as they grind the food less minutely, so they rob the animal of a portion of his nutriment, and thus injure his condition.

Crib-biting.—This likewise proceeds from a deranged state of stomach, and is therefore a frequent, though not a constant companion, to the other symptoms of defective condition.

The morbid change which takes place in the alimentary canal in the state called "out of condition," is not sufficiently defined, and whether it be a diseased state of structure in its surface, or whether it arises from a vitiation of the secretion of the parts, is not altogether clear. If we argued from some appearances which occur, as the swollen state of that cuticular portion of the alimentary canal which lines the mouth, called *lampas*, and the thickened state of the cuticle of the tongue also, we should be led to infer a diseased alteration in the cuticular lining of the canal throughout. I have also observed in two instances which occurred of horses having been accidentally killed, both of which were very much out of condition, that the cuticular portion of the stomach was relaxed and streaked with inflamed marks nor was the secreting

or villous portion without some mark of affection also. On the contrary, in Crib-biting, which is evidently an eructation of a small quantity of gas, I should, reasoning analogically, be prompted to believe that the secretions themselves might become vitiated, and that this affection, as well as some other of the symptoms of morbid condition, were purely dyspeptic, and dependent on an altered state of the gastric secretion.

Worms within the stomach and intestines, but principally the latter, will often injure the condition, and produce irregular appetite, costiveness, with a mucous covering to the dung-balls when they pass, and a staring coat.

The Treatment of Morbid Condition.

From what has been said it will be evident that as many different circumstances may produce defective condition, so it would in every instance be favourable to the removal of it were the exciting causes clearly ascertained, for to that we should direct our attention principally. If it were purely local, for instance, as arising from impure air or bad water, musty oats, mow-burnt hay, &c. &c., such causes must be immediately removed. When the case is more constitutional, internal remedies acting on the alimentary canal afford the most ready and certain means of relief. When the morbid condition is consequent on an attack of cold on the skin, whereby the capillaries suffer a sudden translation of their blood into the interior of the body to the evident injury of the organs thus congested by these means, the remedial plan is still best promoted by stimulating the stomach into a sympathy with the exterior surface; nauseating medicines in the human

body most readily affect the skin and relax it into a moist, perspirable state, but as there are very few drugs capable of nauseating a horse, and still fewer that will do it mildly, so our dependence on antimonials to benefit the skin by this particular state of the stomach is lost: yet experience teaches us still to rely on them to act favourably on the surface by other stomachic agencies than direct nausea. For myself, I feel more and more assured that in many cases of morbid condition, but particularly in such as are accompanied with thirst and evident derangement of the stomach and bowels, betokened by irregular appetite, lampas, &c., antimonials are highly beneficial. They are equally so in most cases of constringed skin or hide-binding, and still more so when it is affected, as in surfeits, with either small bumps, or swelling, or partial detachments of hair. Antimony received into the blood may relax the vessels themselves, and those of the extreme surface in particular, without disturbance to the stomach, overlaid as much of it is with cuticle: certain it is, that in the above cases, the effect of antimonials on the skin and hair in particular, as well as on the other symptoms of morbid condition, is often striking. In some instances, as in those strongly marked with atony and emaciation, the tonic effect of mineral agents, of astringent bitters, spices, and in others of the more diffusible stimuli of ale, malt, barley, oatmeal gruel, &c. &c., experience proves to be the best adapted to promote the desired end.

But to proceed with this important subject with some regularity, I would direct that in young plethoric horses with much flesh on them, and which are of all others the most subject to take on this state of morbid condition, that one or two moderate bleedings may be premised, particularly in such as have been full fed for

some time previous; if the inner surface of the eyelids or of the nasal membranes show any tinges of red, it is still more necessary to bleed, and in such cases I would repeat the same with moderation once or twice more, or until this inflammatory appearance should be removed. I have found this, united with mashing, in many instances sufficient to relax the hide and reduce the rugous tumefaction of the lampas. In most cases, however, some more active internal remedies will be found necessary with a young and plethoric patient—thus, one or two very mild doses of physic, preceded by a nightly mash, into which ten grains of submuriate of mercury has been mixed, are proper. If there be joined to the affected hide, and the swollen or clammy mouth of lampas, any eruptions on the skin, or any cracks of the heels, stable soiling, or even daily turning out to grass, are advisable; but as these cases usually happen when the animal is either at present wanted, or intended soon to be used, so I have not mentioned turning out altogether; yet if these appearances prove obstinate, such a course will be advisable, provided the season and other circumstances are favourable to the proceeding. But when neither the partial nor total turning out to grass is convenient, and when soiling is likewise not practicable, still the use of carrots as manger-food can be resorted to. To this treatment may be added, after the administration of the physic, a nightly alterative. In thus recommending carrots, soiling in the stable, partial or total turning out to grass, &c., for an ill-conditioned horse, I shall startle the systematic trainer, who will perhaps exclaim, 'What can these have to do with condition?' But I would request such to consider that I am here treating of an actual state of diseased condition, which must be first removed by a regular medical plan of treatment before

any efforts can prove successful in promoting that artificial condition so much desired by him, and, indeed, by most amateurs of the present day. Either of the following formula may be tried, as best suits the veterinarian's view of the matter:—

Crude Antimony - -	2 or 3 drachms.
Cream of Tartar - -	2 or 3 drachms.
Nitre - - - -	2 or 3 drachms.

Or,

Supertartrate of Potash -	2 or 3 drachms.
Nitrate of Potash - -	2 or 3 drachms.
Powdered Sulphur - -	4 drachms.

Both of these will gently stimulate both the stomach and the kidnies, and produce by consent of parts a favourable effect on the skin and hair also. Violent diuretics are never advisable, nor have I seen their mildest form unaccompanied by other remedies produce much good, unless there have been in addition to the other symptoms swelled legs, either with or without discharge.

When morbid condition arises in such horses as from age, previous deprivations, severe work, long confinement in bad stables, or feeding on unwholesome provender, are not to be supposed plethoric, even then, if no actual debility is present, I have often derived great benefit by commencing the treatment with a very mild dose of physic, the horse being previously fully mashed, to make a small quantity of aloes sufficient, for I have generally found that the stomach tonics to be afterwards administered have had double effect from this previous preparation of the alimentary canal. But where the debility has been extreme, or where there has been already sufficient laxity of bowels, or perhaps even super-purgation from drastic physic, begin at once with either of the following tonics:—

Socotrine Aloes, (in powder), - 1 drachm.
Winter's Bark, (do.), - 2 drachms.
Ærugo - - - - 1 drachm.

Or—

Oxide of Arsenic - - - 8 grains,
Pimento (allspice), powdered, - 1 drachm,
Extract of Gentian - - 4 drachms,

made into a ball with liquorice powder

Or—

Sulphate of Copper - - 1½ drachms.
Sulphate of Iron - - - 1½ drachms.
Ginger, (powdered), - - 1 drachm.
Sufficient horse-turpentine to make a ball.

Either of these formulæ may be given some time in each day, at the convenience of the practitioner or owner. It would, however, where practicable, be more prudent to let it be given in the morning fasting, allowing the horse but a handful or two of hay for an hour after its exhibition. If a liquid form only can be got down, either of the above mixtures can be dissolved and poured down as a drink with ale; but active mineral agents seem to produce their effect best in a mass. In all cases of morbid condition marked with emaciation and debility, a full allowance of carrots is advisable, and in default of them, or alternating with them, malt-mashes or speared corn may be usefully brought in aid of the other tonics. The essentials of the common cases of morbid condition as far as regards their immediate medical treatment, are comprised in what has been already said. I have here to add, that as a topical auxiliary remedy, I have derived great benefit in cases where the skin has been peculiarly hard, dry, and scurfy, but particularly where the hair has fallen off in patches, as after surfeits, &c., from the use of powdered-sulphur mixed with oil. and rubbed

well into the skin every other day for a week. I shall now proceed to give an outline of the principles of what is termed getting a healthy horse into condition, or, in other words, into that state which fits him for useful purposes on his removal from grass.

Getting a Horse into Condition.

When a horse returns from grass or straw-yard, both his external appearance, and the internal state of his body, in general require considerable alteration before he can be said to be fit for the uses to which he is applied by man.

These alterations are popularly called "getting a horse into condition," and as the exertions required of him are ordinary or extraordinary, so the condition into which he is to be brought is more or less artificial. It is evident, therefore, that no precise rules for the purpose can be expected here, where principles alone are professed to be taught; and indeed were it otherwise, from the simple treatment of the ordinary hackney to the discipline of the training-stable the grades are so numerous and diversified, that no common limits would suffice for their detail. The alterations in the frame required by condition have already been stated to be the removal of all unnecessary interstitial matter, by which the animal fibre becomes more condensed; and all interruptions to progression being now removed, the motions are accelerated, the lungs are allowed to expand, which enlarges the measure of the wind, and the stimulating nature of the food gives courage and durability. To promote condition in a horse from grass, his dieting and watering, the temperature to which he is removed, his clothing

grooming, and exercise, are the circumstances to be particularly attended to.

Physicing is also a usual and necessary appendage to the other parts of the treatment.

Dieting.—It would be most imprudent to take a horse from so moist a food as grass and at once to place before him hay and corn without caution or limitation. Coming from a straw-yard this restraint is not so imperative; yet even in this case little corn should be given at first, but following the removal from grass, both corn and hay should be allowed but sparingly, particularly the former. The hay given for the first two or three days should likewise be moistened by sprinkling it with water; the corn allowed should also be mixed with bran, by which the dangers of constipation and repletion may be avoided.

The constipating effects of the removal from a moist to a dry course of feeding may be further obviated by a nightly bran-mash. The bran mashing may likewise be extended to twice a day, or until the bowels be somewhat relaxed: if the horse be very full in flesh, or have his skin at all tight or irruptive, or if the legs be inclined to swell, in all which cases it likewise tends to shorten the process, and prevent that almost irrecoverable hide-binding which often follows these appearances, if succulent food, particularly carrots, be mixed with, or even wholly substituted, for hay. The privation of grass renders it prudent that water should at first be given in sufficient quantity: it is often withheld with a view to harden the flesh and get up the belly; but this treatment at first is erroneous, and by exciting heat, thirst and indigestion, frustrates its own intention. The temperature into which the newly-stabled horse is removed should not at first be much increased beyond that to which he has been so long accustomed or the

sudden change may operate unfavourably on his lungs, and if it does not produce inflammation it may at least occasion roaring or broken-wind. The most prudent plan is first to place the horse in an airy box, which will not only prevent too great heat, but also obviate the danger of swelled legs and heated feet. By degrees so much increase of temperature may be kept up as will promote the fall of long hair, or the retention or renewal of the short, and in the degree to which the artificial coating is wished to be carried, to that degree should an ardent or temperate climate be imitated. The clothing and grooming should, like the other parts of the conditioning-treatment, be at first very moderate; the one produces extra heat, the other extra irritation, but by degrees both may be increased according to the views of the owner or the purposes of the horse.

Physicing is found to assist the condition of horses, for by emptying the bowels thoroughly absorption of the extraneous fluids is promoted. One, two, or three doses, according to the extent to which the condition is intended to be carried, are usually given to every horse where this process is conducted on the usual principles, and are certainly necessary wherever a continued and accelerated exertion is required.

Exercising a conditioning horse, like the other aids, must be done with a due regard to circumstances, at first walking alone best answers the purpose, and twice a day is better than once; the duration of each walk must be regulated by the age, the fulness of habit, &c. &c. As the condition improves, trotting and galloping may be employed to benefit the wind, draw up the carcass, and accustom the horse to full work. It may be here remarked that I have seen all attempts to promote condition fail in a horse removed from an old companion, or when stabled alone. Horses are gre-

garious, and often bare secregation badly; such a case can only be treated by association.

DIRECTIONS TO TRAVELLERS ON HORSES.

During a journey, it is always difficult to avoid accident in one way or another, especially if the distance be far; and consequently it is the wisest plan always to be in some manner armed for their reception: for at times it may be out of our power to obtain those remedies and that assistance which may be necessary on those occasions. The following directions for the traveller may therefore be found very useful if attended to:—

When a Shoe is Lost

The horse ought not to be urged on at an immoderate pace, but gently walked or trotted until some smith's forge is found where the loss may be repaired; and if the feet be filled with gravel, &c., they should then be cleaned out.

If the foot be recently and slightly wounded, a little oil of turpentine poured upon the part and set fire to with a hot poker is commonly a present cure without any other application.

Injury of the Coffin-Bone.

The Coffin-Bone may chance to be affected, then apply:—

Tincture of Benzoin - - 1 ounce.
Oil of Turpentine - - - half an ounce.

Of the following mixed oils, one ounce and a half—viz.,

Ægyptiacum - - - 4 ounces.
Oil of Turpentine - - - 4 ounces.

These inserted into a gallipot, which may perhaps contain three or four times the quantity required, add—

Sulphuric Acid - - - half an ounce.
Nitrous Acid - - - 1 ounce.

Mix these together with the two first articles, by a little at a time, and immediately add—

Spirits of Wine - - - 8 ounces.

Mix the whole carefully together, and put them in a bottle for occasional use.

Grease in the Heels.

As horses are subject to greasy heels, the rider on a journey should have the following ointments :—

Common Turpentine - - 1 pound.

Melt it over a slow fire, and add—

Alum, (in powder), - - 1½ pounds.
Bole Armenic, (in powder), - 2 ounces.

Mix the whole together till cold, and when to be used spread it on strong brown paper, apply it over the part that greases, and bandage it on with listing. Once dressing is, in general, sufficient to perform a cure, if not, repeat it when occasion requires.

Blaine recommends—

Oxymuriate of Quicksilver - 10 grains,
Cream of Tartar - - - 3 drachms,

Nitre - - - - - 3 drachms,
Antimony - - - - 3 drachms,
given every night in a mash to a healthy horse. Or—
Sulphuretted Quicksilver - 4 drachms,
Supertartrate of Potash - 1 ounce,
given in a mash, nightly. This, however, is expensive. Sometimes with this he has used the following :—
Oak Bark - - - - 1 ounce.
Verdigris - - - - 2 drachms.
Or—
Alum - - - - - 1 drachm.
Charcoal - - - - 4 drachms.
Chalk - - - - - 2 ounces.
Or—
Verdigris - - - - 4 drachms.
Calamine - - - - 1 ounce.
Tar - - - - - 4 ounces.

In confirmed Grease, the following have been effective as washes :—
Nitric Acid, (Aquafortis). - - 1 ounce.
Water - - - - - 8 ounces
Or—
Sulphuric Acid - - - 1 ounce.
Water - - - - - 10 ounces.
Or—
Oxymuriate of Quicksilver - 3 drachms.
Spirits of Wine or Brandy - 1 ounce.
Soft Water - - - - 10 ounces.
Or—
Subacetate of Copper - - 4 drachms.
Sulphate of Alum - - - 4 drachms.
Sulphate of Zinc - - - 4 drachms.
Supercetate of Lead - - 4 drachms.
Tar - - - - - 6 ounces.

Smear the parts daily.

Strains and Bruises.

In case the horse be injured by a Strain or a Bruise, rub on the affected part the following mixture :—

Camphor - - -	half an ounce.
Oil of Turpentine - -	$1\frac{1}{2}$ ounces.
Spirits of Wine - - -	2 ounces.

If the Strain be of old standing, the following liniment may be used :—

Camphor - - - -	half an ounce,
Oil of Origanum - - -	2 drachms,
Soft Soap - - - -	2 ounces,
Spirits of Wine - - -	4 ounces,

mixed. This remedy is also useful in spavins, windgalls, and indurated swellings. Or, if preferred, use the following :—

Strong Mercurial Ointment -	4 ounces.
Camphor - - - -	half an ounce
Oil of Rosemary - - -	2 drachms.

Saddle-galls.

In case of a sore back, arising from the friction of the saddle, apply—

Camphor - - - -	2 drachms,
Oil of Rosemary - - -	1 drachm,
Hog's Lard - - -	3 ounces,

mixed into an ointment.

Coughs.

When the animal is afflicted with a teasing cough, it may be relieved by the following drink :—

Opium	1 drachm.
Castile Soap	2 drachms.
Camphor	1½ drachms.
Oil of Anniseed	20 drops.

Inflamed Eyes.

Horses on a journey are frequently attacked by an inflammation in the eyes, which may be removed by the following applications :—

Goulard's Extract	1 teaspoonful,
Camphorated Spirit	2 teaspoonsful,
Elder-flower Water	half a pint,

mixed.

Or—

White Vitriol	1 drachm,
Water	1 pint,

mixed.

Febrile Affections.

When the symptoms of Fever appear, a rider should administer the following drink :—

Cream of Tartar	1 ounce.
Turmeric	1 ounce.
Diapente	1 ounce.

Mix, and give it in a pint of warm gruel, to be repeated once or twice a-day, or oftener if necessary. Though simple, it may be given in most kinds of fevers, and will generally be attended with success. In an inflammatory fever, give the following drink :—

Emetic Tartar	1 drachm.

Kali - - - - - half an ounce,
Camphor - - - - 1 drachm,

rubbed into powder, with five drops of spirits of wine.

To be given every four hours, or three times a-day, in a pint of water-gruel.

The following is also strongly recommended:—

Camphor - - - - 1½ drachms.
Nitre - - - - 4 drachms.
Calomel - - - - 20 grains.
Opium - - - - 20 grains.

Syrup enough to form a dose for one dose.

Or—

Emetic Tartar - - - 1½ drachms.
Compd. powd. Tragacanth - 2 drachms.

Syrup enough to form the ball for one dose.

It is, however, necessary to remark, that no medicine will avail much in fever, particularly if violent, if bleeding be neglected.

In febrile complaints, accompanied with costiveness, or in slight cases of grease, no medicine is safer than castor oil; one pint of which may be given for one dose. An experienced farrier recommends three or four ounces of common salt, well dissolved in water-gruel, with eight ounces of linseed oil. He adds, "though we have prescribed linseed oil, there is no doubt castor oil is preferable; but this cannot always be procured readily; and as many may object to the expense of it where the disorder is but trifling, linseed oil may, on such occasions, be substituted. Salad oil is still better. We have recommended common salt in preference to Glaubers and Epsom salts because it is more certain in its effect, and may be given in smaller doses."

Here it may also be proper to observe, that nothing

is more useful as an article of diet for sick or convalescent horses, than water-gruel, provided it is properly made, and as this is seldom done, we shall give the best method of making it. Take of fine and sweet oatmeal, four ounces; water, two quarts; put the water over a slow clear fire to boil, and mix the oatmeal gradually, with as much cold water as will make the mixture quite liquid: add this to the water over the fire before it gets very hot, and continue to stir the whole till it boils: the gruel is then made, but may be improved by letting it simmer some time longer over a slow clear fire, for horses are very nice, and perhaps would not touch it if in the least smoky. Should the gruel be too thick, add warm water.

Inflammation of the Spleen.

I never met with this disease in my own practice, but I have lately heard of a very well authenticated one, in which the symptoms so exactly resembled Hepatitis, as to be mistaken by a very observant practitioner for that. An active and judicious treatment was promptly pursued, but the violence of the disease destroyed the horse on the fourth day. On examination, the spleen was highly inflamed and nearly gangrenous, while the surrounding viscera were unaffected.

A chronic enlargement of the spleen is less rare, and produces symptoms not unlike jaundice, even to the yellow tinge of the skin. Rupture also of the spleen occasionally occurs.

INFLAMMATION OF THE LIVER.

Hepatitis is not a frequent occurrence in veterinary practice, for the liver of the horse is but seldom primarily affected with inflammation; though when other great abdominal inflammations take place then this often participates, and now and then also it becomes the immediate object of attack, in which cases the only difference between the symptoms and those of hepatitis are, that they are not quite so violent, and that there is usually a yellow tinge in the conjunctive nasal and buccal membranes. When it terminates unfavourably, it usually disorganizes the liver into a grumous mass. It is mostly occasioned by some undue exertion. A few years ago several cases fell under my notice, at the close of a very hot summer, in most of which extensive anasarca appeared. The cure should be attempted by the same means as are detailed in enteratis, but with the recollection that active purgatives may be administered with advantage. The following is a proper form, and should be repeated every four or five hours until the costiveness, which is usually present, is overcome:—

Calomel - - - -	1 drachm.
Antimonial Powder - -	2 drachms.
Aloes, (powdered), - -	3 drachms.

Hepatitis is now and then accompanied with diarrhœa; in which case use the lancet sparingly, and give the following:—

Castor Oil - - - -	4 ounces.
Gruel or Linseed-tea - -	6 ounces.
Ipecacuhana - - - -	1 drachm.

By the help of the yolk of two eggs beaten with the oil, and the gruel added gradually, a smooth uniform

mixture may be made, which will be found peculiarly useful to amend the state of the evacuations, and should be repeated every other day, giving the following ball also, twice every day:—

Opium - - - -	1½ scruples,
Calomel - - - -	1½ scruples,
Camomile, (powdered), - -	4 drachms,

mixed with honey to make a ball. No apprehension need be entertained that the calomel will increase the diarrhœa, as the opium will sufficiently restrain it: observing, that should the disease be protracted beyond the third day, the calomel must not be persisted in, for fear of salivation; but, instead, a course of tonics with steel may be entered on for four or five days, and then have recourse to the calomel, &c. &c., as an additional security against relapse. In other respects, as diet, clothing, &c. &c., treat as Colic.

Weariness.

Mr. White says, "that fermented liquors, such as beer, porter, or wine, have been often given with great advantage in cases which required cordials. I have often seen horses that have been so fatigued with a long chase or journey, as to refuse their food, and appear quite exhausted, wonderfully refreshed by taking a cordial ball in a pint or more of beer, and feed soon after with great alacrity. The advantage thus derived is not merely temporary, as they are by this treatment rendered adequate to another chase or journey much quicker than they would otherwise be. I once gave," continues this gentleman, "six ounces of brandy diluted, with the best effect to a horse that was once done up on a journey; it enabled him to continue it without any apparent inconvenience."

The Treatment of Chronic Cough.

This must depend on our view of its causes and consequence. When it appears to arise from a want of mucous secretion, expoctrance which excites such secretions are premised, as number 1: when a redundancy of the mucous secretion is apparent, tonics are required. When the secretion is acrid, give number 2. The cough, which is the effect of an irritable state of the parts, is sometimes relieved by stimulating the throat externally, and by giving internally opium with bitter tonics. When horses have naturally a full habit, and grossly fed, without sufficient exercise, our attempts must be directed to lower their general plethora by bleeding, exercise, and more moderate feeding: if at grass, a less luxuriant pasture should be chosen; in the stable, such a horse should be muzzled at night to prevent him eating his litter, and his water should be given in moderate quantities, only all sudden exertions likewise should be as much as possible avoided.

I have frequently seen chronic cough benefitted by a course of mercurial physic, but the affection in such cases was probably dependant on worms; and whenever a continued cough exists, with irregular appetite and unthrifty coat, stools fœtid and slimy, at one time loose, at another hard and dry, it is more than probable that worms occasion the affection. In all chronic coughs, the best effects sometimes follow from feeding with carrots, turnips, parsnips; beet and potatoes may be beneficially used where carrots cannot be got; and a mash with bran and linseed, or malt, may be occasionally given. In cases of this description, which may be suspected to be depended coagulable

lymph deposited within the trachea or bronchiæ, the rubbing in of mercurial ointment the whole length for a week would be advisable, and then to blister the like extent of surface.

1.

Calomel - - - -	1 scruple,
Gum Ammoniac - - -	2 drachms,
Balsam of Peru - - -	1 drachm,
Squill - - - -	1 drachm,

made into a ball with honey, and given fasting.

2.

Tar Water - - - -	half a pint,
Lime Water - - - -	half a pint,
Squill - - - - -	1 drachm,

mixed, and given every morning.

3.

Ipecacuhana - - -	1 drachm,
Camphor - - - -	2 drachms,
Liquorice - - - -	4 drachms,

made into a ball with honey, and given in the mornings.

To either of the above may be added, with benefit in some cases, one or two drachms of tartar emetic.

INFLAMMATION OF THE CONJUNCTIVA

Often arises from the effects of purging; but purging only causes the constitutional tendency to the disease being brought into effect, and producing debility, from the medicine, which becomes the exciting cause; the disease then being constitutional it will direct us to notice the proper remedies.

Take:—

Blue Pill - - - -	12 drachms.
Opium - - - -	2 drachms.
Linseed Meal - - -	1 ounce.

Form this into a mass with soft soap, and divide into six balls. Give one every second morning, fasting. Or, take—

Sulphate of Copper - -	12 drachms.

Or—

Sulphate of Iron - - -	12 drachms.

Take either of the above, and form into a mass with linseed meal and soap, and divide into six balls, and give one every morning.

Setons between the jaw seems to do some good, and the following has been used satisfactorily:—

Take—

Tartar Emetic - - -	1 drachm,
Hog's Lard - - -	1 ounce,

formed into an ointment.

Rub this on the cheek and round the eye till small pimples arise; but especial care must be taken that none be allowed to enter the eye of the horse, which would be highly injurious.

STRAINS IN GENERAL.

Strains are of two kinds: the one originating in the ligamentary parts, by which the different joints are preserved in contact; the other by a relaxation of the muscles or tendons, or by a rupture of any of the membranes covering or adhering to such tendons, whose purposes are the direct office of motion. Hence

it is, that the farrier and groom are so frequently at a loss for their definition of any particular lameness, fixing by conjecture upon any part, attributing it to any cause but the right; and to this they are seldom directed by any mental information, possessing a very barren conception of the structure of parts, their purposefs or their appropriations.

The elastic part of a tendon or sinew is the muscular, to which, in fact, the tendon is a continuation only, with this difference, the tendon is made by nature to occupy a much smaller space than muscle, for it would look rather awkward to see the muscles of the fore-leg extending down to the heels of the horse, instead of that fine uniform make which the tendons give, and especially in the race-horse: the tendon is not of that elastic nature that some writers have described, but it is the muscular end where the elasticity exists; this, at first sight, would appear strange, for the injury takes place in the tendon, not in the muscle; and for this reason the *non-elasticity* of the tendon and its sheath will rather submit to rupture, and that for want of the elastic quality. These tendons or sinews are strong substances, composed of innumerable threads or fibres, possessing the properties of extension and contraction to a certain degree, beyond which their flexibility cannot be extended without palpable injury and certain lameness; for by over straining their elastic quality, small as it is, rupture is the consequence, and lameness in proportion to the injury sustained.

To render this idea as clear as I possibly can, and that it cannot be misunderstood even by the merest tyro in horse-knowledge, let us suppose that the horse is going at his best pace on the trot, and in so doing his toe covers a prominence, or the edge of one, where the heel has no support, the consequence is, an exten-

sion of the tendons, or a rupture of the same; by which means destroying part of nature's work, and constitutes what is termed letting down of the back sinews; a circumstance which frequently happens on the turf, and the horse is then said to be "broken down."

This being supposed to have happened, the principal indication of cure will immediately strike everybody, so far as the gradual contraction and tone of the tendons are concerned; but the previous and instantaneous consideration will be to prevent as much as possible any consequent inflammation that may fall upon the parts

To which end take away so soon as convenient after the injury is sustained, a portion of blood adequate to the state and strength of the subject, from a vein as contiguous to the part affected as may be consistent; and as your success will in a great measure depend upon the earliest application, take—

Vinegar - - - - 1 quart,

and having made this hot, add—

Extract of Saturn - - - 1 ounce.

Foment the leg with this until it is exhausted—say for two or three times a day; and after each fomentation, bandage the leg well and firm, with a woollen bandage. Give bran-mashes for a day or two, and the following:—

Cape Aloes - - - - 2 drachms,

Juniper Berries - - - 1 drachm,

made into a ball with soft soap. Give one every night.

After fomenting for two days, use the following embrocation: let two or three tablespoonsful be gently and gradually rubbed into the affected part every night and morning, always remembering to use the bandage tolerably tight and firm:—

Take—

Barbadoes Tar - - -	2 ounces.
Spirits of Turpentine - -	2 ounces.
Opodeldoc - - - -	4 ounces.

Mix them well together, and keep well stopped for use.

This application is of little use without *rest*. Too much stress cannot be laid on this most predominant and necessary article, from which the greatest good must certainly result. To the want of patience and mercy only it is to be attributed that so many fine horses have been considerably blemished, instead of being indulged with proper time in the field.

GREASE, (*see also* p.p. 144—149.)

This complaint takes on different states or stages, which being known by different terms, as swelled legs, cracks, grease, graped heels, &c., are apt to be considered as distinct diseases; but the causes producing any one of them may produce the other, and the treatment of all must be grounded on the same principles.

Nevertheless, for simplicity of reference, we shall consider these several states separately, still blending the character of the specific affection, and the treatment.

Of *Cracks*.—As a consequence of general plethora, the capillaries of the heels are subject to distention and consequent inflammation. This state is frequently the consequence of a sudden change in the habit of life, and therefore frequently shows itself in young horses which have been at once removed without due caution

from grass or straw to hot stables and corn. At first there will be a simple heat and itching of the part; the horse will be observed to rub one leg against the other, and sometimes to stamp with his foot, the whole surface appearing more red than before, but perhaps without much enlargement. If this state be not attended to, there succeeds an oozing out of a serous discharge from a kind of crack, of which there are sometimes several.

Occasionally the suppurative state follows so closely on the adhesive inflammation, that purulent matter appears to flow from them from the first; but if suffered to proceed, pus always makes its appearance first or last.

In this early state of turmid itching, scruffy heels, frequently little more is necessary than a sturnine wash, having first well cleansed them with soap and water and well dried them afterwards, removing as much of the cuticular eruption as possible

When the case has proceeded to form cracks, it will be adviseable to attempt a stoppage of the discharge by some desiccative powder, as white lead and tutty in equal quantities. If with an inflammatory state there is an ichorous discharge, the saturnine ointment is to be preferred, avoiding still wet applications; but when an ulcerative process is fully established, the cracks showing much virulence and tenderness, then something more is necessary, as a moderate bleeding with alteratives, and a nightly bran-mash; or even one or two doses of physic may be prudent if the horse should be of a very gross habit.

The cracks themselves should be carefully washed with warm water whenever the horse returns from exercise; after which, bathe with any mild astringent lotion as the following:—

Sugar of Lead	-	-	2 drachms,
White Vitriol	-	-	1 drachm,
Infusion of Oak Bark	-	-	1 pint,

mixed.

Sometimes the irritability of the part requires a poultice previously to the use of the astringent, as of goulard and bran. I have found scraped carrots or turnips very useful for the purpose, after which the astringent will act with better force.

It becomes a question, whether in a case of confirmed grease, even if it were in our power, it would be prudent to stop the discharge at once, for when secreting vessels have been long habituated to any action they can seldom be suddenly checked with impunity; and in this case also, were the running stopped without previous preparation for the change, it is more than probable that some morbid effects would arise.

To commence the cure, therefore, of confirmed grease, we must prepare some other parts to take this action of forming pus. But it is to be first remembered that the discharge from grease is seldom a healthy one, and it is hence much more difficult to check than one that is simply purulent; therefore while some other parts are preparing to receive this purulent pus, the heels themselves should be subjected to a treatment that may produce a more healthy secretion in them.

The best means I have ever witnessed for effecting this, has been a fermenting poultice, made with either barley meal, flour, oatmeal, linseed, or any other farinaceous matter capable of fermenting with yeast. This should be applied every day as soon as mixed, and suffered to perform all its fermentative process on the leg: when, by the action of the carbonic acid gas, or fixed air let loose, it is remarkable what a change is performed on the part, bringing on, from the most ichorous

discharge and irritable state, a mild bland pus like fluid, with a decrease of irritability. Should either the trouble or expense of these be objected to, a carrot or turnip poultice may be tried instead—either of which may be applied till it produces a secretion of healthy matter; but it must be remembered, previously to the use of these means, that no ulcer shows a favourable disposition to heal so long as its surface remains about the level of the surrounding healthy parts; therefore it is essentially necessary to the cure, that these sprouting luxurious portions should be reduced even with the surrounding integuments.

Caustics only render these grapes, as they are termed, more luxuriant; but the mode best adapted to their removal is to scrape off all the horny deposit, and thus level the surface with a very blunt knife; having a flat surface of headed iron also ready to pass over the surfaces in case the hæmorrhages are profuse.

It is also to be remarked, that from the effects which have followed this intended styptic, there is reason to suppose that it acts also remedially; and that in all cases it should be united with the means used to denude the parts of the horny secretion and to level the surfaces. The operation being finished, apply the poultice as directed.

To prepare the other parts to take on the formation of matter: on the first day of applying the poultice, if the horse be large and tolerably strong, put a rowel in the belly, and introduce a seton on the inner side of each thigh, or place two rowels only, one in each thigh.

If the horse be small or weak, one rowel will be sufficient. In three days the maturing of the rowels and setons will be complete, and by this time the heels will have taken on a more healthy action. It is now,

therefore, that we are to attempt to stop the discharge, which can only be done by the use of the most active of those applications called astringents, which will stimulate the parts to take on the adhesive inflammation. For this purpose, either of the following may be tried as a wash to be used daily, or every other, or every third day, or as often as the irritability of the parts will permit; some cases may require either of these applications strengthened, others weaker, than here detailed. Try the weaker first:—

Aquafortis - - - -	1 ounce,
Water - - - - -	8 ounces,

mixed. Or—

Oil of Vitriol - - - -	1 ounce,
Water - - - - -	10 ounces,

mixed. Or—

Corrosive Sublimate - -	3 drachms.
Spirits of Wine or Brandy - -	1 ounce.
Soft Water - - - -	10 ounces.

Dissolve the mercury in the spirit by the help of the mortar, and then add the water.

Verdigris - - - -	4 drachms,
Alum - - - -	4 drachms,
White Vitriol - - - -	4 drachms,
Sugar of Lead - - -	4 drachms,
Tar - - - - -	6 ounces,

mixed.

This may be smeared over the parts daily, and will seldom occasion so much irritation as the former; but it is essential to the cure that a considerable inflammation be raised; the necessary degree of which must depend on the state of the case and the temperament of the patient. The clivers or goose-grass has been likewise extolled as a remedy for bad grease cases four ounces of the expressed juice are directed to b

given daily as a drink, and a poultice of the herb, mashed, is to be applied to the heels.

When the discharge has ceased, it will sometimes be found that coagulable lymph has been thrown out, by which a hardened, thickened state of the limb remains. Blisters may in this case be first tried to promote the removal, assisted by a run at grass; but should these, as is sometimes the case, fail, the stimulus of firing should be tried. It must likewise be remembered, that as this complaint is very liable to recur again, from the parts having taken on the habit, and from the secreting surface being enlarged, so the recurrence is also best prevented by firing, which lessens the surface and affords strength by corrugation.

When this is not employed, active pressure by linen bandaging may be worthy of a trial. Nothing has hitherto been said on internal remedies or on other parts of the treatment as regards food or exercise: in fact it will at once strike the judicious reader, that exactly the same rules and the same cautions will apply here as have been detailed when treating on the other states and stages of this complaint. The constitutional tendency to disease must be equally amended by the internal remedies there laid down, that by these means the extreme irritation of the affection may have given way, when any of the accompanying formulæ may be tried, according to the appearance the eye assumes:—

Sugar of Lead - - -	1 drachm.
White Vitriol - - -	2 scruples.
Water - - - - -	1 pint.

Or—

Crude Sal-Ammoniac - -	2 drachms.
Vinegar - - - - -	2 ounces.
Infusion of Red Rose Leaves -	1 pint.

Or—

Brandy - - - -	1 ounce.
Vinegar - - - -	1 ounce.
Tincture of Opium - - -	2 drachms.
Rose Water - - - -	8 ounces.

Or—

Æther - - - - -	4 drachms.
Infusion of Oak Bark - -	6 ounces.

Or—

Rose Water - - - -	6 ounces.
Mindererus' Spirit - - -	3 ounces.

Introduce any of these by means of a small piece of sponge or rag within the inner angle of the eye, gently pressing in a little, which the action of the nictating membrane, or haw will soon carry over the surface. The cajeput oil has been tried with some benefit. Gall, common salt, watery solutions of opium, of aloes, and of ground ivy also, have all of them had their advocates. Mercurial courses, occasional physic, periodical bleeding, and often repeated alteratives, have been frequently tried alone, and all have as often failed.

Swelled legs with discharge.—In some instances, with a general want of condition, the result of chronic disease, inanition or of convalescence from acute diseases, there is great tumefaction of all the extremities, which is apt to be followed by serous discharge from several outlets.

The curative plan in this case differs from the former, and is more complicated, for we have to combat the general debility by generous diet, in the form of speared corn, malt mashes, with soiling in summer, and carrots, &c., in winter. We must also endeavour to lessen the watery deposit by very mild diuretics, by remedies determining the serous parts of the blood towards the skin in the form of perspiration, and sometimes also by mild purges; but the former are more certainly

adviseable in general debility; because, in these cases, particularly by mild diuretics, the watery parts of the blood are, as it were, simply separated; whereas purging appears to be more the increase of a secretion that answers some necessary purpose in the system; and, as such, the operation calls more of the powers of the constitution forth without any additional advantage.

This appears the proper mode of considering this circumstance generally; but I must not forbear to mention, that I have now and then, even in cases of emaciation, witnessed the good effects of one or two doses of physic, by which the discharge has mended, the horse's carcass has become let down, and other signs of improved condition have appeared. It was before hinted that cases occur of discharge from the heels, where astringents, immediately applied, only irritate: every practitioner must have met with such instances, as they are sufficiently common; the cause of which is attributed by farriers to *humours*. Without cavilling about the term, we know that in this form of the complaint, such an irritative state of the parts is not an unfrequent attendant, and that it must be soothed and allayed before the parts will suffer themselves to be even gently stimulated by the mildest astringent applications. In these cases, the heels, in addition to the tumefaction, and the pouring out of ichorous or semi-purulent discharge in considerable quantities, are stiff, tender, and painful in the extreme; the horse evinces the greatest reluctance to have any thing done to them; and when he is moved snatches up his leg convulsively, while the extent of vascular action is such that the heels smoke when exposed.

This highly irritable state of the vessels can only be reduced by poultices. Sometimes it requires those of linseed, at others, it more readily yields to those

of bran, and wetted with goulard-water; while some again are most benefitted by those made of scraped carrots; others by mashed turnips previously boiled.

By these means, the heat, tenderness, swelling, and redness, will abate: the discharge also from a thin ichorous one will become white, bland, and truly purulent. At the same time, likewise, that the poultices are producing this effect on the discharge, the general determination to diseased action should be counteracted by alteratives. The following unites the necessary purgatives:—

Corrosive Sublimate	10 grains.
Cream of Tartar	3 drachms.
Nitre	3 drachms.
Prepared Antimony	3 drachms.

Give this every night in a mash, except the complaint takes place in a very emaciated horse, when, instead of the corrosive sublimate, the same quantity of arsenic.

On the contrary, if the patient be of a very full plethoric habit, add one or two drachms of powdered aloes to the diuretic, making the whole into a ball instead of a powder; watching, however, the action of the aloes, that it does not proceed to active purging or griping.

In some cases, when the expense has not been an object, I have found the following an excellent alterative in cases of grease:—

Æthiops Mineral	4 drachms,
Supertartrate of Potash	1 ounce,

given every night in a mash.

In these cases also one or two doses of mild physic are often useful; and when the parts have been brought into a proper state for the action of astringent applications, either of the following may be sprinkled over

the sores, for in different subjects each has appeared to have had its due and wished-for effect—and consequently to be relied on :—

Powdered Oak Bark - -	1 ounce.
Powdered Verdigris - -	2 drachms.

Or—

Alum, (powdered), - - -	1 drachm.
Charcoal, (do.) - - -	4 drachms.
Chalk, (do.) - - -	2 ounces.

Or—

Verdigris - - - -	4 drachms.
Calamine - - - -	1 ounce.
Tar - - - - -	4 ounces.

Mix and smear the parts lightly night and morning, and after each exercising, having first washed them with warm water.

When also much tumefaction takes place, united to the use of any of these, a linen bandage is often beneficial, beginning at the coronet, and rolling it more than half way up the leg, being careful that it is only done with a very moderate tightness at first.

As amendment proceeds, great care is required to prevent relapse, by avoiding the original exciting causes, and likewise by counteracting that predisposition to these accumulations which I have known to subsist in many horses who seldom pass over a season without an attack. Such had better not, at any time, be fully turned to grass, but allowed only a few hours run during the day.

Confirmed Grease.—This is to be considered only as a more aggravated stage of the former, in which the matter that issues has a fœtid peculiar smell, which strongly characterises the disease; so much so, that a person accustomed to it can at once tell whether a greasy horse be in the stable or not.

The frog is a very important part of the hoof, inasmuch as it forms an elastic cushion for the protection of that part of the tendon of the leg which terminates and attaches itself to the inferior surface of the coffin-bone by a broad expansion of its fibres, anatomically, the aponeurosis.

Its form is that of a wedge, and which is admirably adapted to give the foot stability by its resistance when indented in the earth. It has been supposed to be essential to the purpose of keeping the heels at a proper distance from each other, and thereby to prevent contraction; but this opinion does not appear to be well founded, because the frog is composed of a substance much softer than the heels, and consequently less capable of performing that office than if it were more dense in its texture.

It is very subject to disease when the horse is kept in the stable, and it is also frequently found in an imperfect state even amongst colts at grass. It is generally larger and healthier in flat feet than in those that are concave, and this arises from its being more exposed to pressure, by which means its healthy action is maintained, and any accumulation of superfluous moisture is prevented from taking place. The natural state of the hoof is kept up solely by an equal growth in all parts. Whenever this growth becomes irregular and unequal, an alteration of form naturally ensues. Thus, when the wall is too strong, it overpowers the resistance of the sole, which in consequence is rendered more concave, and the heels are forced closer together. But when the wall is too weak, the sole, in process of time, descends to the ground and becomes flat, and sometimes convex. In this case the foot is more expanded at the bottom; but in proportion with that expansion it will be more or less contracted above at the

coronet. These changes in the shape of the hoof are brought on by slow degrees, and thus escape observation until they have proceeded to such an extent as to lay the foundation of permanent and incurable disease. It is certain that the chief cause of injury to the hoof arises from the stable, to which may be added the bad consequences of shoeing, even when executed in the most proper and judicious manner.

That these effects manifest themselves more or less in different subjects is doubtless true, to a certain extent; but this may be in some measure attributed to an original difference of constitution.

Many ingenious theories have been published on the best means of obviating this inevitable evil, and a long list of hoof-ointments have been recommended by regulars as well as quacks, all of which may serve to amuse the curious, or to impose upon the credulous part of mankind, but which upon trial will prove eventually to be but fallacious preventatives. There is a strange propensity in the human mind to ascribe every thing to some mysterious source, even though the origin of any particular circumstance stares them in the face as plain as the sun at noon-day.

When the frog becomes diseased, it is called a running-thrush. This may proceed from the frog wanting pressure, owing to its being kept off the ground, or from a disposition to inflammation in the foot increased by standing on stale litter. When the frog is not sufficiently pressed upon, it becomes soft from the accumulation of the fluid which it naturally secretes in great abundance from the fatty substances which lie immediately under the aponeurosio of the flexor tendon of the foot. This accumulation of fluid at length makes its escape through the cleft of the frog and heels, and becomes fœtid by exposure to the atmosphere, and so

acrimonious as to destroy the adjacent parts. In this state the frog becomes so sore and tender as not to endure pressure without a painful sensation, and the horse consequently will be more or less unsafe in his going.

The discharge may be stopped by astringent applications, but it is not prudent to check it too suddenly, as such a course sometimes produces general inflammation in the foot, attended with lameness, and, in this case, the discharge generally breaks out again with redoubled violence. Colts at grass are sometimes subject to running thrushes; this happens where the walls of the hoof are exceedingly strong, in which case the heels do not wear away sufficiently to let the frog touch the ground. Soft and wet pastures also contribute to this disease. To obviate this inconvenience the heels should be pared down very frequently. The frog should be cleared of all the ragged and diseased parts; and after being well washed with soft-soap and warm water, it may be dressed either with spirits of turpentine or verdigris dissolved in water.

When the disease has existed so long as to have insinuated itself between the horny and fleshy soles of the foot, it is then called a canker, and must be treated in the following manner, namely;—first to cut away all that part of the hoof which is detached from the parts within, and to dress the diseased surface with butter of antimony, upon which should be laid a pledget of dry tow, covered with powdered lime; and this dressing should be repeated every day until the surface is cleared of the foul stinking fungus, and puts on a red healthy appearance, after which it may be treated as a common wound, dressing it simply with common digestive ointment sprinkled with verdigris.

Pressure also will be useful in preventing the granu-

lations of the new flesh from rising too luxuriantly, and which otherwise must be kept under by caustic, a practice which puts nature to a great deal of trouble in producing a new surface. During the process of curing any of the above-mentioned diseases of the feet, it is advisable to give some purging medicine, which tends to accelerate the healing of the ulcers by increasing the action of the absorbent vessels. The following ball may be given with safety :—

Barbadoes Aloes - - - 8 drachms,
Castile Soap - - - 2 drachms,

mixed into a ball with syrup. Previous to taking this ball the horse should be prepared by bran-mashes on the preceding day, and these mashes may be given cold as a more likely means of inducing him to eat them. Indeed the practice of giving mashes too hot is very injudicious, as the horse may happen to scald his mouth, and in that case he generally refuses to touch one ever after.

It is also very essential that the horse should be thoroughly cleaned and dressed during his lameness, as it is too often the practice to neglect this salutary operation, from the idea that it is unnecessary because he does not work.

Grease is a disease of the lower end of the legs, and generally occupying the hollow on the back part of the fetlock-joint. The nature of the discharge is similar to that of the running-thrush and the canker. It generally begins by a swelling of the limb, produced by the want of exercise, or from a want of a proper action in the absorbent vessels. It more generally attacks cart-horses, (especially those of a large heavy breed, with round fleshy legs), than blood-horses.

The most prevalent source of this disease is debility, and this may arise from very opposite causes. The

healthy state of all animals is constituted by a due and vigorous circulation of the blood, and a regularity in the natural evacuations of the body. Whatever disturbs any of these functions will produce debility. In a full plethoric habit the blood-vessels become oppressed by being overloaded, and are thereby rendered incapable of performing their office. Hence debility ensues; and the legs being the part most remote from the heart, which is the centre of circulation, become swelled for want of the accustomed absorption. On the other hand the circulation of the blood may also be rendered feeble from the animal being weak and emaciated either from immoderate labour, or from a want of sufficient food.

The disposition to this disease is also greatly increased at particular seasons of the year, such as the spring and autumn, or by want of regular exercise and thorough cleaning. The pavement of the stalls of the stable being on an ascent, and obliging the horse to stand on the stretch, is another very probable cause of the grease.

In the healthy state of the animal the insensible perspiration is carried on in a regular manner, as may be ascertained by the glossy appearance of the coat, as well as by the softness and pliability of the skin. On the contrary, when the natural evacuations are suspended by disease, the coat is hard and dry, and the skin almost immoveable.

There are many circumstances which may cause a suspension of the insensible perspiration, but the principal one arises from a sudden change from heat to cold. This may be produced by the horse standing in the open air whilst in a sweat from exercise; or it may arise from washing him all over with cold water whilst in that state, or from the still more abominable cus-

tom of taking him into a brook up to his belly, and riding him round for a considerable length of time, so that he has to pass through a fresh succession of cold water every time he goes round. This practice is very common among post-boys, and horse-keepers to stage-coaches, and very frequently brings on the most violent inflammatory attacks on the lungs, or on the intestines; and every coach-proprietor and inn-keeper who has been in the habit of suffering this practice, should at once abolish it.

ON TRAINING FOR THE COURSE AND THE CHASE.

THERE is scarcely any part of the management of horses that requires more judgment and nice discrimination than that which relates to the present subject. Certain received opinions, and deep-rooted prejudices, have long held an arbitrary sway in matters of this nature, and whoever is bold enough to dispute the soundness of these opinions must expect nothing but ridicule for his pains. The plea of experience is constantly thrown in his teeth; and the ancient charter of tormenting and destroying horses is maintained with as much pertinacity as Magna Charta is by every true Briton and friend of his country.

But the validity of experience must in all cases depend principally on the variety of systems that have been put in practice, and on a fair and impartial comparison between them. For the experience of a set of men who have never trode but in the same beaten track cannot be worth much. It may, indeed, some-

times point out to them that they are wrong, but it can never show them how to go right without a thorough knowledge of radical principles. A man may for fifty years of his life see the sun rise in the morning, and set again at night, but although he knows the certainty of this fact from experience, still he may remain till the day of his death as ignorant of the nature and course of that celestial body, as he was at the first hour of his existence. Precisely of this quality is that sort of experience which is held up as the basis of all stable knowledge, and from which it is considered a kind of heresy to dissent.

It is certain that there are some people who deem the most violent and preposterous mode of treatment as perfectly safe and harmless, merely because the poor animal that is doomed to undergo it happens to survive it. A simple perusal, however, of most of the stud-books of men upon the turf, will afford ample evidence of the danger of the practice; one instance alone, having come under the observation of the author of the present work, where in a list of the produce of a particular brood-mare, no fewer than three of eleven died in training.

Accidents of this description, however, are so far from convincing the owners of race-horses of the folly and temerity of such a system, that they appear to submit to them as mere matters of course, and are ready to attribute the fatal result to any thing but the true cause.

This may be called experience with a vengeance; and it seems to have pretty much the same effect as the spectacle of an execution has upon the fellow who is detected in picking pockets under the very gallows.

If every horse's constitution was precisely the same, the whole business of training might be restricted to

the narrow compass in which it is at present comprised. But whilst there is so much, and such evident variety, the mischief which accrues from adhering to one general course must be, one would suppose, sufficient to induce a change of practice. It is admitted on all hands that no man would ask another to repair or regulate a piece of machinery except the person so employed was fully acquainted with its constituent principles. But there seems to be an extraordinary latitude allowed in every thing that relates to horses; and every stable-boy who can ride and clean a horse, is supposed to be perfectly acquainted with the animal economy and the cause and cure of diseases, without possessing one particle of knowledge on the subject of anatomy, or of the nature and effect of drugs.

He acquires a certain train of reasoning from his elders, and talks in the same profound style about humours, &c., and in due time bleeds, purges, and sweats, without mercy, every horse that happens to fall under his hands. That many a good horse has died under such an ordeal is an indisputable fact, nor is it less certain that many a good racer has been beat solely from the bad effects of the treatment before mentioned.

That such a system as the one alluded to is not absolutely necessary to qualify a horse for the business of the turf, has been proved at more periods than one. The following instance may serve as an illustration of this fact. About seventy or eighty years ago, a sporting gentleman, Sir Robert Fagg, (of the county of Sussex), was in possession of the best blood on the turf at that day, but the super-excellence of his horses was such, that he found it difficult to make any matches without giving very great odds in weight.

He therefore kept his horses in a very rough state,

without clothing, simply feeding them with the best hay and oats, and giving them strong exercise every day. In this state they were travelled to the different races, and sometimes to increase their disguise, a pair of panniers were put upon their backs. This trick of course did not last long, but it enabled him to make some advantageous matches, by which he won immense sums.

As it may not be unentertaining to the reader to give him a specimen of the early system of training, the following extract, from a very old author on equestrian matters, has been selected :—

" *The ordering a horse for a match or plate.*—When you have either matched your horse, or design him to run for a plate, you should consider that you ought to reserve a month at least to draw his body perfectly clean, and to refine his wind to that degree of perfection that is capable of being attained by art.

" In the first place, take an exact view of the state of his body, both outwardly and inwardly, as whether he be low or high in flesh, or whether he be dull or heavy when abroad ; and if this has been by too hard riding, give him an ounce of diapente in a pint of good old Malaga sack, which will both cleanse his body and revive his spirits. Then for the first week feed him continually with bread, oats, and split beans, giving him sometimes the one, and sometimes the other, according to what he likes best, always leaving some in his locker to eat at leisure when you are absent ; and when you return at your hours of feeding, take away what is left and give him fresh, till you have made him wanton and playful. For this purpose, take notice that, though you ride him every morning and evening on airing, and every other day on hunting, *yet you are not to sweat him*, or put him to any violent la-

bour, the design of the weeks ordering being to keep him in wind and breath, and to prevent pursiveness. You must now make a finer bread than before, as follows: take two pecks of beans, and a peck of wheat, and let them be ground together, but not too fine, to prevent too much bran in the bread, and dress one peck of the meal through a fine range, and knead it only up with new ale-yeast, and the whites of a dozen new-laid eggs, and bake this in a loaf by itself; but dress the rest of the meal through a bolter, and knead it only with ale and yeast, and use it in all other points as the former; the peck-loaf is to be given the horse when you set him, and the other at ordinary times. This bread very much increases the strength, courage, and wind of your horse. If your horse be brisk and lively when you lead him out of the stable he will leap and play about you, then you must not only omit giving him the sack and diapente, but any other dose whatever, for it will rather prey upon the strength, and by that means weaken him. If your horse be engaged in a hunting match, you must sweat him; you must sweat him twice this week, not by hunting him after the hare, but by train-scent, since the former on this occasion may prove deceitful; for though the hounds should be very swift, yet the scent being cold, the hounds will very often be at fault, and by that means the horse will have many sobs, so that when he comes to run train-scents in earnest he will expect ease for his wind. Therefore lead your train-scent with a dead cat, over such grounds as you are likely to run on, and which best agrees with the humour of your horse, and also choose the fleetest hounds you can get, and they will keep your horse up to the height of his speed. As to the number of the train-scents which you should ride at a time, that is to be ordered according to the

match you are to run, or rather according to the strength of your horse, and his ability for performing his heats; for if you labour him beyond his strength it will take him off his speed, weaken his limbs, and daunt his spirit. If you give him too little exercise, it will render him liable to be pursive and full of humours, and incline him to a habit of laziness, so that when he comes to be put to labour beyond his usual rate, he will grow restive and settle like a jade."

Training for the Chase.

It is a rule with the best sportsmen that no horse should be used in hunting till he is full five years old: some will hunt them at four, but the horse at this time is not come up to his true strength and courage, and will not only fail at every tough trial, but will be subject to strain and accidents of that kind much more than if he were to be kept another year first, when his strength would be more confirmed.

When the hunter is five years old, he may be put to grass from the middle of May till Bartholomew-tide; for the weather between these is so hot, that it will be very proper to spare him from work. At Bartholomew-tide, the strength beginning to be nipped by frosts and cold dews, so that it is apt to engender crudities in the horse, he should be taken up while his coat is yet smooth and sleek, and put into the stable. When he is first brought home, he should be put in some secure and spacious place where he may evacuate his body by degrees, and be brought, not all at once, to warm keeping: the next night he may be stabled up. He ought to be well supplied with good meat, litter, and

water, and to be often dressed, and suffered to sleep as much as he pleases; he should be so fed that his dung may be rather soft than hard, and it must be of a bright clean colour.

There is a general practice among the grooms in many places of giving their hunters wheat-straw as soon as they take them up from grass. They say they do this to take up their bellies; but their seems much reason to disapprove of this. The change is very violent, and the nature of the straw so heating and drying, that there seems great reason to fear that the astringent nature of it would be more prejudicial than is at first perceived. It is always found that the dung is hard after this food, and voided with pain and difficulty, which is in general very wrong for this sort of horse. It is better, therefore, to avoid this straw-feeding, and to depend upon moderate airing, warm clothing, and good old hay, and old corn, than to have recourse to any thing of this kind.

When the horse has evacuated all his grass, and has been properly shod, and the shoes have had time to settle his feet, he may be ridden abroad, and treated in this manner:—the groom ought to visit him early in the morning, at five o'clock in the long days, and at six in the short ones; he must then clean out the stable, and feel the horse's neck, flank, and belly, to find the state of his health. If the flank feels soft and flabby, there is a necessity of good diet to harden it, otherwise any great exercise will occasion swellings and goutiness in the heels. After this examination, a handful or two of good old oats, well sifted, should be given him; this will make him have more inclination to water, and will also make the water sit better in his stomach than if he drank fasting. After this, he is to be tied up and dressed. If in the doing of this he

opens his mouth as if he would bite, or attempts to kick at the person, it is a proof that the teeth of the curry-comb are too sharp, and must be filed blunter. If, after this, he continues the same tricks, it is through wantonness, and he should be corrected for it. Then he is to be rubbed down with the brush, and dusted a second time; he should then be rubbed over with a wet hand, and all the loose hairs, and whatever foulness there is, should be picked off. When this is done, and he is wiped dry as at first, a large saddle-cloth is to be put on, reaching down to the spurring-place; then the saddle is to be put on, and a cloth thrown over it, that he may not take cold; then rub down his legs, and pick his feet with an iron picker, and let the mane and tail be combed with a wet mane-comb. He should then be mounted, and walked a mile at least to some running water, and there watered; but he must only be suffered to take about half his water at one drinking.

Walk him a little after he is out of the water, then put him to a gentle gallop for a little while, and after this bring him to the water again. This should be done four or five times, till he will not drink any more. If there is a hilly place near the watering-place, it is always well to ride up to it; if otherwise, any place is to be chosen where there is free air and sun. That the creature may enjoy the benefit of this, he is not to be galloped, but walked about in this place for an hour, and then taken home to the stable. The pleasure the horse himself takes in these airings, when well managed, is very evident, for he will gape, yawn, and shrug up his body; and in these, whenever he would stand still to stale, dung, or listen to any noise, he is not to be hindered from it, but encouraged to every thing of this kind.

The benefits derived from those airings are numerous—they purify the blood, teach the creature how to make his breathing agree with the rest of the motions of his body, and give him an appetite for his food, which hunters and racers that are kept stalled up are otherwise apt to lose. An hour or more after the horse is come in from his airing, the groom should give him a wisp of clean hay, making him eat it out of his hand; after this, let the manger be well cleaned out, and a quartern of oats, clean sifted, be given him. If he eats up this with an appetite, he should have more given him; but if he is slow and indifferent about it he must have no more. The business is to give him enough, out not to clog him with food. If the horse gets flesh too fast on this home feeding he is not to be stinted to prevent it, but only his exercise increased; this will wear down his flesh, and at the same time give him strength and wind.

After the feeding in the morning, the usual method is to shut up the stable, only leaving him a little hay on his litter. He need be no more looked at till one o'clock, and then only rubbed down, and left again to the time of his evening watering, which is four o'clock in the summer, and three in the winter. When he has been watered, he must be kept out an hour or two, or more if necessary, and then taken home and rubbed as after the morning watering. Then he is to have a feed of corn at six o'clock, and another at nine at at night, and being then cleaned, and his litter put in order, and hay enough left for the night, he is to be left till the morning. This is the direction for one day, and in this manner he is to be treated every day for a fortnight; at the end of which time his flesh will be so hardened, his wind so improved, his mouth so quickened, and his gallop brought to so good a

stroke, that he will be fit to put to moderate hunting.

In order to strengthen a hunter, when subject to violent and frequent exercise, some recommend to give some old split beans at every feeding with oats; and others think the crumbs of bread made of beans and wheat-flour, and given once a-day, an excellent method for preserving the appetite. The day before the horse is to hunt, it will be found much better to give a little bread with the oats than beans, which are rather hard of digestion.

Training for the Course.

Much ignorance and prejudice prevails on the subject of training for the course; and many a good horse has been killed or beaten in consequence of the absurd practices too frequently adopted. Old and foolish opinions are now in a great measure exploded; yet most people think it absolutely necessary to prepare horses for the field by the administration of these strong purges.

'There seems,' says a late writer, 'to be some magic attached to the number three, for the animal is always condemned to swallow a third dose, even though the two first may have operated within an inch of his life, and have left him in such a state of exhaustion and debility as would require a considerable time to overcome. Undoubtedly there are many cases where purging is indispensably necessary to get a horse into condition; but on the other hand it is equally true, that there are thousands of horses which undergo constant and severe labour, without any preparation of the kind whatever; and there are no racers nor hunters

in such high condition as mail-coach horses, that are well fed, and kept in cool stables, and that travel a certain number of miles regularly every day, and these horses are seldom or never purged, except in cases of worms or greasy heels.

Dr. Bracken, who was a great sportsman, and a great enemy to this indiscriminate practice of purging, cites a case of a mare of his own which he had run for six years, having in that time only given her two purges. He also states that she had no medicine whatever during that period, except about the bigness of a pigeon's egg of cordial ball occasionally, and that she performed as well as most of her neighbours, having won eight plates out of nine every year.

Mr. Clark of Edinburgh, also makes some very judicious observations on the abuse of purging medicines. Speaking on this subject, he says, ' It may be of use to the young practitioner to explain what is meant by the phrase of the *humours falling down;* but at the same time I must inform him that this phrase is so generally in use, that when a horse's eyes are affected, the humours are said to fall down into them, although they are situated nearly in the most elevated parts of the body. But to explain their falling down to the extremities I shall take a case that frequently occurs. When a horse that is in the highest state of health, but is too fat and full of juices, and accustomed to stand much at rest, is suddenly put to violent and long-continued exercise, his legs will be apt to swell soon after; they will, perhaps, continue in that state for some time; they may at last break out in running sores about his heels, and form cracks, &c. When in this situation, it is said that the humours have fallen down in the legs. Here a question naturally occurs where were those humours before the

horse underwent this severe exercise, and how came they to fall down on this occasion only? Unless a horse has been gradually habituated to exercise previous to the undergoing that which is violent or long-continued, his vessels will be too full of fluids; and these, especially the finer capillaries, from the force and rapidity of the circulation during the exercise, will admit the grosser fluids that do not usually circulate in them. They are likewise liable in these cases to be ruptured; hence the fluids they contain escape into the cellular membrane, where they stagnate, and being then out of the course of circulation occasion a swelling. If this happen in the legs, as the most dependant part of the body, the humours are then said to have fallen down; the swelling causes a distension of the skin, cuticular pores are then enlarged, and admit through them the thinner parts of the fluids to the outward surface of the skin, which on being exposed to the external air, are then changed in their quality, and acquire, according to circumstances, either a clammy or greasy nature, or else a sharp fœtid ichorous quality that erodes the skin, and by lodging there forms small ulcers.

It ought always to be remembered that great evacuations weaken an animal body; and if they are repeated frequently, and too close upon one another, without allowing a proper interval between each, or if they are carried to excess, as is sometimes the case, the weakness of the animal system is thereby increased, the powers of life are overcome, and death follows of course."

Further upon this subject Mr. Clark says, " I do not approve of repeating purge after purge merely because this or that horse is to run or hunt, without first considering whether the animal be fat or lean, or

whether he has been kept at hard meat, with proper exercise, or whether he has run a considerable time, or late in the season at grass. All this, and several other circumstances necessary to be attended to, ought to be duly considered before any purging medicines are administered: for example, if a horse has run long at grass, and is of a plethoric and full habit of body, evacuations by purging, and diuretic medicines to a certain degree, are necessary, together with length of time, good feeding, and regular exercise. But if a horse be of a lean, low, or dry habit of body, whether it may proceed from the want of proper food, from fatigue, or any other cause, can it be proper to reduce him still lower by repeated evacuations of any kind? There is such an inconsistency in this practice, that it would not even deserve to be noticed were it not too much practised every day; for with some people it is no matter of consideration with them what state of body a horse may be in—that is, whether he be of a fat and full, or lean and dry habit of body, still he is said to be full of humours, and which must be purged off before he is fit for running or hunting.

When a horse has undergone the regular purging, and the ceremony of taking cordial balls, he is galloped and sweated in his clothes at certain intervals. By this unhealthy system he is relaxed; and when suddenly exposed to cold, he stands all in a heap, with his back up, his legs drawn together, and his tail close to his buttocks, shivering and shaking like an aspen-leaf. Such a horse may be said to be half blown before he begins to start.

Indeed no horse can be taken up fat from grass, and sweated both suddenly and violently, without producing weakness and exhaustion. A horse thus misused, will be all in a lather of sweat before he has run

the third part of his race, to the great astonishment of the trainer, who never dreams that such an event to take place from *too much* as well as too little previous sweating.

Mr. Richard Lawrence recommends that the exercise should be regular, moderate, and of sufficient duration. "Thus, for instance," says he, "the horse might be ridden gently for a few minutes with his clothes on; by which time the circulation of the blood would be so much increased as to resist any ill effects of the sudden application of cold to the body. He might then be stripped and set off at a canter or a hand-gallop for about a mile; then walked for a few minutes, and the cantering repeated, and continued in this way alternately for about an hour, taking care that the animal should not sweat beyond a moderate and general moisture of the skin. This portion of exercise should be given him twice a-day for the first fortnight or three weeks after he has gone through his physic; and it might afterwards be increased by giving him some strong gallops, in order to practise him in the free use and command of his limbs to the utmost extent of action. By thus sweating, with his body and head and neck uncovered, he will have the benefit of the contact of the fresh air, the vapour arising from the skin will fly off as fast as it is produced, and the vessels will be strengthened and invigorated by the freshness of the passing breeze. If any further reasoning were necessary to show the bad effects of immoderate sweating in the body-clothes, the following analogy might very fairly supply it. It is a fact which most horsemen and drivers of horses must know, that a horse when going *with* the wind, sweats more than when he is going *against* it; and this simply from the circumstance of his being, in the first case,

constantly surrounded by the vapour arising from his own body; whereas, in the latter case, the wind meeting him drives it away, and with a quickness proportioned to the velocity with which he is going. Hence a horse is always more fatigued and exhausted when he goes *with* the wind, than when he goes *against* it."

It would certainly be highly improper to start a horse with a full belly; still it is also improper to keep him for several hours on the muzzle before he starts. Long fasting naturally produces faintness. A moderate meal might be given with advantage about four hours before starting.

It is, as before noticed, very improper to water a horse on the training ground, and immediately after to set off on a canter or hand-gallop.

Such treatment is apt to produce spasms, with all their fatal consequences. Should a mare, while training, show a desire for the horse, it will be necessary to give bran-mashes, and occasionally Epsom salts; though under such circumstances it would be better, if convenient for the owner, to decline running.

The violent labour of the race-horse certainly requires some preparation, in order to divest the body of all superfluous fats and fluids, as well as to improve the breathing; but purging and sweating ought to be carefully and judiciously used, and a proper regard paid to the constitution of the animal.

"We have happily got quit," says Mr. Scott, in his British Field Sports, "of much of the stoving in hot and suffocating stables, and of the excessive and debilitating purgation of former days. Even the malignant and bewitching humours, always supposed to be resident in the body of the horse, have been nearly laughed and exorcised out of it, since the salutary

horse-laugh originally against them by Bracken and Gibson; and could we but both reason and experiment away the exhausting, enfeebling, spirit-galling, crippling sweat, we should render our training and running stable system very near to perfection; which indeed already is, with the above stated exceptions, the most correct, maturely considered, and comfortable to the horse, of any other in existence."

In continuation, the same writer says, "Speed materially depends on the freshness, elasticity, and healthy tone of the sinews, which one would suppose can scarcely be promoted by a weekly laborious and fatiguing gallop of four or six miles, under a weight, alive or dead, of perhaps fifteen or sixteen stone, the horse not perhaps fairly able to race with twelve; all horses, besides, whatever their powers, age, nature, or constitution, being treated in the same way. If there be any satisfactory experimental proofs to invalidate the above arguments, such have not reached me: I have never heard any other plea for the necessity of forcibly reducing running-horses to the state of *boneleanness*, than that of custom and opinion; and to dismiss this part of the subject, granting that a severe method of training would ensure a somewhat greater superiority of performance, would it not be preferable on all hands to give up such an advantage, if an advantage it can be deemed, for compassion's sake in the first instance, and for the considerable benefits of preserving the limbs of the horses in a sound state, and more to be depended upon, and of lengthening the duration of their service?"

Training Horses to Leap.

It is proper that all hunters and military horses be taught to leap. This should be done gradually and gently, lest the horse falls and becomes fearful. It is best to commence by leading him to a low bar covered with furze, which, pricking the horse's legs if he does not raise himself sufficiently, prevents his contracting a sluggish and dangerous habit of touching as he goes over, which any thing yielding, and not pricking, would give him a custom of doing. Many horses in learning to leap are apt to come too near, and in a manner with their feet under the bar. The best way to prevent their doing so, is to place under the bar two planks, of the breadth of the pillars on which the leaping bar is fixed; these planks should meet and join at the top under about two feet high from the ground, and project at bottom from the ground about two feet; they should be strongly framed, that the horse may not break them by touching them with his feet: the bar should be placed so as to run round when touched. The ditches and hedges to which a horse is first brought, should be small and inconsiderable; and in this, as in every thing else, the increase should be made by degrees. The horse should be accustomed to approach the object he is to leap, gently and without hurry, and to stand coolly at it for some time, and then to raise himself gently up, and go clean over it without either laziness or impetuosity. When he has been taught to leap well standing, he may next be brought to walk up to the bar, and to go over it without halting; and after he has become a little familiar with this practice he may be led up to it in a trot, and so by degrees quicker and quicker, until he is brought

to leap it flying or a full gallop. In going at a leap, the reins should never be held tight, because the horse cannot use or have the free use of his shoulders and fore-legs except his head be at perfect liberty. Many riders, however, have a notion that a horse's head should be held up a little by the bridle, with a view, as they term it, of assisting him, and directing him to measure his leap. This is, however, a very mistaken notion, as many riders know to their cost; it very often is the means of pulling the horse into the ditch. A horse will always learn how to measure his leap if left to himself, better than when the rider attempts to regulate his motions; because, if his head be held up and constrained by the bridle, he can neither see so well where he is going, nor can he have the free use of his shoulders and fore-legs, both of which are absolutely necessary to enable him to accomplish the leap with ease and safety. Sportsmen, in general, entertain a curious idea, that a horse can extend his leap if he discovers the ditch to be wider than he expected, by taking an additional spring whilst he is going over it. But this is certainly a very erroneous notion, for after the horse has once quitted the ground with his hind-legs, he can neither increase nor diminish the exertion or spring with which he began his leap, because no point of resistance remains for his hind-legs to spring from.

In leaping, it is necessary that the rider should keep his body back; because, by so doing, a great deal of the shock is avoided. The motion of the horse is, in fact, similar to that of a rocking-horse—namely, he first rises with his fore parts, and ultimately with his hinder ones; therefore if the rider projects his body forwards at that period of the leap, he must inevitably be thrown over his horse's head by the jerk which he

receives from the hind-quarters. But in leaning back he should not disturb his previous position on the saddle, for the bend should be confined to the loins entirely. His arms should also remain still and close to his sides; and the best way to teach this, and to prevent their being raised up, is to oblige the rider to hold a switch or a hand-whip, under each arm, and not to let them drop. The thighs and legs should be kept in the same position, without grasping the horse's sides, which only tends to render the shock more violent. It is recommended by some sportsmen to touch the haunch of the horse gently with the whip in passing the bar, in order to make him clear his hinder legs with the address used by the cow, one of the best standing leapers.

The Irish horses are generally good leapers; and these are commonly short in the hind-quarters, and down-rumped, or low in the croup, with their hind-legs standing considerably under the body, and their hocks close together, being what is called cat-hammed.

Riding a Race.

The jockey's seat on horseback differs materially in position from that of the riding-school. The latter is preserved by the balance or equipoise of the body solely; the former by the firm grasp of the thighs, and the knees particularly, confirmed by the opposite directions of the knees and toes, the one turned in, and the other somewhat outwards, and in a small degree elevated. There must be a concentration of muscular power and energy in the rider's arms and shoulders, and breast and knees, for the holding and

support of his horse. The spine or back-bone of the jockey must always be prepared to bend in the middle; since in the horse's running there is a necessity for some inclination of the body forward. The true seat is naturally easy and upright in the saddle as in a chair; the knees about as much bent; the legs falling nearly straight down the horse's side, and the feet home in the stirrups; the hands somewhat above the pommel of the saddle, elbows close to the sides, and the view directed between the horse's ears. Jockey-riding is in truth something between sitting and kneeling; and the length which a man rides should be so regulated, that he may be as it were buoyant in the stirrups, without being so much elevated above the saddle as to depend upon the bridle for his support; at the same time he must not ride so long as to sit a dead weight upon his horse. A man who rides too short, and is elevated too much above the saddle, must naturally have a vacillating and uncertain seat. Of late years, and since the military mania has bewitched our country, the riding-house mode of no more than the toe or ball of the foot in the stirrup, has prevailed to a considerable degree. We have seen directions too of late, in print, for the jockey to turn his toe in, and his heels out, *a-la-militaire*, as though, like Cockney riders, it were apprehended he could not otherwise keep his spurs out of the horse's sides; a groundless apprehension in a well-seated jockey, who, of the two, will find the greatest difficulty in reaching his horse's sides with his spurs.

Chifney recommends riding a racer with a slack rein: but surely it is necessary, in most cases, to hold a horse sufficiently close to keep him together and steady; nor can you otherwise regulate the speed of a horse to make the most of him. Fairly pulling at a

racer whilst he has the full liberty of extending his head and neck to the utmost, can never obstruct his wind or shorten his stroke; and many horses, from habit probably, will slacken their speed on the rein being slackened.

The rider of the speediest, will, in a course, make a waiting race; that is to say, keep behind at a favourable distance, in order to preserve his horse's superior speed for the last run. The distance must not, however, be too considerable, by which error many races have been lost. For example, in a sweepstakes, where the speediest and best horses have sometimes waited so long on each other that the rider of an inferior and unnoticed horse has taken the advantage, and advanced so far, that at last the best could not overtake him. The speedy horse must be favoured also over heavy ground and up hill. The opposite will consequently do for the slow and stout horse. In making the play, however, which is taking the lead, and especially in a four-mile race, it must be considered that the stoutest racer may be run to a stand still; therefore the rider must not at first take too much upon his horse, but keep a few pulls in hand for an occasion; yet go along at such a rate as to keep his speedier antagonist at warm work, wearing him out by degrees: in such a race the stoutest horse will win, unless he is greatly out-footed. In a race of a single mile, or a mile and a half, between a speedy horse with the common defect of that class, inability to *run up to his foot*, and a stout and honest horse that will run through the piece, it may be necessary for the rider of the latter to set off at *scores*, and run all the way through, attending only to the single consideration, that he does not blow or burst his horse, of which he ought to be a judge.

It may be proper in this place to advert to the distinct qualities in the racer of *stoutness* and *honesty;* a discrimination made, but to be aware of which may sometimes be of consequence. A horse may be honest without being stout; that is, he may have the will, perhaps the ambition, to run to his last sob, but being deficient in physical power—he faints, he sinks internally; his lungs, his limbs, refuse any longer to perform their office with their highest energy, and his pace is compulsively slackened. The stout, but not honest horse, will occasionally slacken his pace, and suffer himself to be beaten without any of the above symptoms or appearance of debility; perhaps there is some analogy in this case with that of the cart-horse, which however, in general, a capital drawer, never will or can draw *dead pulls*. It would be difficult to discuss satisfactorily this point as regards the racer; but it may fairly be insisted on, abuse with the whip and spur never succeeds in the case, and in fact horses are well known to have their *running days*, and there are so many obvious and constantly recurring impediments to racing exertion, and the edge or extreme of speed is so delicate a thing, that we may well wonder at the degree of certainty which we are accustomed to witness on the course. In whipping the horse, the hand of the rider is elevated above his head, that the strokes may proceed from the extremity of the whip. Spurring is performed by turning the toe outward, and giving quick strokes. In making the last run, it is an object to keep the *whip hand*, and to avoid being hemmed in by the other horses. It is also politic and usual not to win the race *too hollow*, when in the jockey's power, that the extent of the horse's abilities may not be known. The winning by the shortest possible distance is one great and difficult business of the rider.

HORSE RACING.

In the month of December, 1800, a match was to have been run over Doncaster course for one hundred guineas, but one of the horses having been drawn, a mare started alone, that by running the ground she might ensure the wager; when having run about one mile of the four, she was accompanied by a greyhound bitch, who joined her from the side of the course, and emulatively entering into the competition, continued to race with the mare the other three miles, keeping nearly head and head, affording an excellent treat to the field, by the energetic exertions of each. At passing the distance-post, five to four was betted in favour of the greyhound, when parallel with the stand it was even betting, and any person might have taken his choice for five or ten. The mare, however, had the advantage by a head at the termination.

In Italy, the charming diversion (horse-racing) is not unfrequent. The horses are not, in general, like ours, mounted and managed by a jockey, but are left at perfect liberty to exert their power in the greatest degree to attain the goal. At the time of carnival in Rome, these races are generally run in the long street, called in Italian, *il corso;* the length is nearly eight hundred and sixty-five torses, or rather more than one English mile. They are generally Barbary horses that are employed in this amusement. In appearance, these animals are small and very far from handsome. They are all kept equal by a rope, against which they press with their breasts till the signal to start is given; the rope is then dropped, and the affrighted horses start away at full speed. In Florence they endeavour to increase the speed of their horses by fixing a large piece

of leather, not unlike the flaps of a saddle, on the back of each horse; the under side of this is armed with very sharp prickles, which keep perpetually goading them all the while they run. In order that the horses may not run out of the course, a strong railing runs along each side of the course, and a rope is fixed across at each end, to prevent them leaving the course at the extremities. The speed, however, of these Barbary horses, though considerable, is very inferior to that of our English racers. The course of eight hundred and sixty-five torses at Rome, is run over in one hundred and fifty-one seconds. An English mile is about eight hundred and twenty-six torses, so that these horses run very little more than a mile in two minutes, which an ordinary racer is able to do in England; not to mention Childers, who is said to have run a mile in one minute, and to have run round the circular course at Newmarket, which is four hundred yards short of four miles, in six minutes and forty seconds. Starling is said also to have performed the first mile in a minute. Childers run the Beacon course in seven minutes and a half. The Round course is asserted to have been more than once run in six minutes and six seconds. The Barbary horse must, according to what was said above, get over thirty-seven feet in a second; the swiftness of the English horse will be found by this mode of estimating far superior. Starling must have moved in the performance mentioned before eighty-two feet and a half in a second.

Dr. Moty, in his celebrated publication, "Le Journal Britannique," considering this subject, tells us, that every bound by the fleetest Barbary horse at Rome would cover eighteen royal feet and a half, and twenty-two or twenty-three feet by the English horses; so that the swiftness of the latter would be to that

of the former, as four to three, or nearly. (We are not to forget that the English race-horse carries a jockey, and frequently weights on his back, the Barb nothing). The horse that passed over a mile in a minute would evidently go faster than the wind, for the greatest swiftness of a ship at sea has never been known to exceed six marine leagues in an hour; and if we suppose that the vessel thus borne partakes one-third of the swiftness of the wind that drives it, the latter would still be no more than eighty feet a second, which would be two feet and a half less than the quantity of ground covered by Childers and Starling in that time. For this calculation, we are indebted to M. de la Condamine's Journal of a tour through Italy. Buffon, in his Natural History, mentions an example of the extraordinary speed of the English horse. Mr. Thornhill, the postmaster of Stilton, laid a wager that he would ride in fifteen hours three times the road from Stilton to London, the distance being two hundred and fifteen miles. On the 29th of April, 1745, he set out from Stilton, and after mounting eight different horses, arrived in London in three hours and fifty one minutes. Instantly leaving London again, and mounting only six horses, he reached Stilton in three hours and fifty-two minutes. For the third course, he used seven of the same horses, and finished it in three hours and forty-nine minutes. He thus performed his undertaking in eleven hours and thirty-two minutes. Buffon observes, "I suspect that no example of such fleetness was ever exhibited at the Olympic games." A horse the property of a gentleman in Bilter Square, London, trotted on the 4th of July, 1788, for a wager of thirty guineas, thirty miles in an hour and twenty minutes, though allowed an hour and a half. These instances of speed are

astonishing, even by ordinary horses. The four miles for the Union cup at Preston were run in very little more than seven minutes.

THE WALK.

This is the most gentle of all the paces, and would appear, at first view, to be the most easy; nevertheless, it is a remarkable fact, that not one horse in five hundred can walk well, or even walk at all. This may be attributed to various causes, but the principal one undoubtedly arises from the bad conformation of the animal.

The first point essential to the performance of a good walk, is, that the animal should naturally be so placed on his legs, when standing still, as to preserve a proper equilibrium in all parts of the body.

The head and neck, projecting beyond the shoulders and fore-legs, consequently occasion a greater weight mechanically than if they were replaced immediately above them; and this weight will be either increased or diminshed, according to the forward or backward position of the fore-legs.

In the first place, therefore, if the shoulders be upright, the fore-legs generally stand far under the body; hence the point of support is farther removed from the head and neck, and which must consequently increase the weight of those parts.

When the rider is mounted, and sitting on the centre of the horse's back, the fore-legs, if well placed, and in a perpendicular direction, will stand between his body and the horse's head and neck, whereby these

two weights will form a sort of counterpoise to each other; but when (as has just been observed,) the shoulders are upright, and the fore-legs incline inwards under the body, then the central point of support is lost, and the head and neck become heavier in consequence of that circumstance.

If, therefore, the fore-legs do not stand perpendicular and well advanced before the shoulders, it is almost impossible the animal should move them lightly and with sufficient freedom. The faculty of walking well is not, however, confined to the position of the fore-legs alone, as it is necessary that the shape of the hinder quarters, and the position of the hind-legs, should also accord with that of the fore-legs to produce a proper harmony in their action.

Much, also, will depend on the back, and the muscular power of the haunches and thighs. A long-backed horse is generally easier to the rider than one of an opposite description, but he cannot be so strong, nor so collected in the motion of his limbs, as a short-backed horse; and it may generally be observed, that a long-backed horse has a rocking vermicular motion of his body during progression. With all horses that walk firm, fast, and well, the hind-foot overreaches the mark of the fore-foot by some inches; and this arises from the animal being able to use his hind-quarters with freedom, and to advance his hind-legs well under his body, by which the fore-legs are greatly relieved; as the hind-legs in that case take more of the weight of the body than they would do when dragged after the animal: the hind-legs, therefore, should stand perpendicular under the round bone, which is the connecting joint of the thigh and leg with the body.

In that case their flexion and extension will be even and uniform, and the animal will move with

much less labour than he would under other circumstances.

In the action of the walk, the horse moves his legs separately: that is to say, one after the other. Thus, if he begins with the right he first raises the right or off hind leg, and advances it under his body; but before the foot reaches the ground, the right or near fore-foot, is raised and advanced, in order to make room for the hind-foot; which, in middling and slow walkers, alights upon the mark of the fore-foot; but in good and fast walkers oversteps it considerably, as has been just observed. As soon as the near fore-foot alights upon the ground, the off or left hind-foot is raised; the left or near fore-foot then rises to make room for the near hind-foot, in the same way as on the other side.

The walk, therefore, consists of a separate and successive action of all the four legs, beginning with a hind-leg; and in proof of this, the same remark will be found in an old author, "Borelli de Motu Animalium."

TROTTING

Is a quicker action than that of walking; for here the horse covers his legs at two intervals of time instead of at four, as observed in the last section.

A fore-leg and a hind-leg are moved simultaneously, but on opposite sides: as thus, when the near or left fore-leg leaves the ground, the off or right hind-leg is elevated at the same moment; and when these two come down, the others are moved in the same manner.

This is generally the pace required in horses destined to go in harness.

Trotting upon hard roads soon wears out the fore-legs and feet, and there are few fast trotters at seven or eight years old that do not show signs of being the worse for wear.

In this pace, the body is propelled forwards in a straight direction, without that alternate rising and sinking of the fore and hind-quarters which takes place in the canter and in the gallop. Hence the whole weight and shock of the body is received by one fore-leg at a time only; whereas in the canter and the gallop, the hind-legs first sustains the weight, and thereby reduce the shock, which would otherwise fall on the fore-legs entirely.

The concussion arising from fast trotting upon hard roads, particularly in frosty weather, is sometimes so great as to occasion violent inflammation, producing what is called *founder*, or a sinking of the coffin-bones; and even, in some cases, to occasion a separation of the hoof altogether.

English horses are more subject to this inconvenience than foreign horses, because they go more upon their shoulders, and with their haunches more behind them, thus throwing all the weight forwards.

Foreign horses, on the contrary, bring their hind-legs more under their bodies, and bend their knees more; and instead of throwing out their fore-feet before them, they bring them down in nearly the same place from whence they raised them. This kind of action, of course, is not so speedy as that of the English horse, but it is much less injurious to the legs and feet, and at the same time is more easy and pleasant to the rider.

Foreign horses are generally longer in the pastern

joints; and this conformation also lessens concussion, by increasing the elasticity.

Horses that are very short in their backs, generally trot wide with their hind-legs, especially those that are what is termed *cat-hammed;* that is to say, with their hocks standing close together, and their feet at some distance from each other; by this manner of moving their hind-legs, they avoid striking or overreaching their fore-feet, as their hind-feet alight on the ground on the outside of their fore-feet.

There is also another method of going, by which short-backed horses escape overreaching; and that is, by trotting a little side-ways, like a dog; by which means, one hind-foot comes between the two fore-feet, and the other hind-foot on the outside.

This method of going, however, is unpleasant to the rider; because, if he sits in a straight direction, he cannot so well adapt the motion of his own body to that of his horse, which is constantly carried in an oblique position, and he is therefore obliged to sit with one shoulder more advanced than the other, although he is going in a straight line of direction.

It is a common opinion that blood horses never make fast trotters. This, perhaps, may arise in some measure from their never being selected for that purpose. But as all fast trotting, beyond a certain rate, becomes a run, it is evident that the length and pliancy of the legs of the blood horse, together with that elongated or darting action which they all show in the trot, is not adapted for that short or quick step by which the common hack is distinguished.

THE FOOT

May justly be considered as the most important part of the whole machine; for upon its sound and healthy condition the utility of the animal chiefly depends. From the universal frequency of its diseased state, it might almost be supposed that it was more defective in its original construction than any other part; but such a conclusion is not warranted by the evidence of nature in any of her primordial arrangements. The fact is, that the surface of the earth, which in its original state is soft and yielding, is rendered hard and inelastic by the substitution of denser materials in the composition of artificial roads.

The constant and inordinate degree of labour which the cupidity of commerce, and the calls of luxury, have imposed upon the animal, is such as would consume the foot much more rapidly than it could grow or be reproduced, were it unprotected by the shoe. It is to these causes, therefore, that we should look for the source of nine-tenths of the lameness with which the horse is so often afflicted. For however skilfully the shoe may be formed and applied to the hoof, still the result of shoeing will ever be pernicious in a greater or less degree, because the foot must be subjected to an unnatural restraint, counteracting the radical principles of its constitution and economy. The hoof of a colt, antecedently to its being shod, describes nearly a circular form, and is widest at the lateral parts or quarters. The utility of this shape must be self-evident, inasmuch as it increases the basis upon which the foot stands, and thereby gives greater stability to the animal during progression. The external parts of the hoof are usually divided into three; namely, the

wall or crust, (which is the part issuing from the pastern to the ground), the sole, and the frog. At its uppermost part, which is called the coronet, the hoof begins, either by a gradual change of the skin into the horn, or by some peculiar vessels which produce the transformation. The coronet, therefore, is softer, more flexible, and more sensible, than the lower part of the hoof, which increases in density and insensibility as it approaches nearer the toe.

The horse's hoof may be said to be partially cleft, as the heels are divided from each other, the intermediate space being filled up by an elastic substance called the frog. From this arrangement, the heels possess, in a small degree, the power of expansion and contraction, but which action is almost totally prevented by the confinement occasioned by the shoe.

The difference of shape between the foot of the horse, and that of all other quadrupeds of the herbiverous tribe, is well worthy the attention of the naturalist, as it very distinctly points outs the purposes for which he was created. Hence, had the hoof been cloven throughout, like that of the ox, the deer, the sheep, or the goat, he would not have been so well adapted for carrying burthens, nor for drawing heavy substances, as he is by its solid and circular form in front, which affords him a greater point of resistance than he could have obtained from the more flexible and yielding motion of the cleft hoof.

The sole is composed of the same horny material as the wall, but it is somewhat more elastic. It would be partially worn away by friction against the ground, if the animal were unshod, but it would be re-produced by its own natural growth in the same manner as is the case with the wall. A moderate degree of friction and pressure against the earth is essential to its healthy

state; hence, by being constantly elevated above the ground by the shoe, it becomes more tender, and more susceptible of injury.

The surface of the sole, in its natural healthy state, is somewhat concave. This shape not only gives the foot a greater hold of the ground, but removes the principal part of the pressure arising from the weight of the body to the edges of the wall and to the frog. The sole, like the root of the hoof, is constantly growing, but this perpetual increase would be kept down sufficiently by the friction were the horse unshod, and in a state of nature, but the sole being raised considerably above the ground by the shoe, no part of its surface is worn away; hence the superfluous part detaches itself in scales, which becoming dead and destitute of moisture, breaks off spontaneously. Horses whose feet are weak, sometimes have the sole even convex, by which the orlginal plan of the hoof is completely subverted both in regard to the proper points of support, as well as to the firmness of its position on the ground.

ON THE EXCELLENCE OF ENGLISH HORSES.

We quote the following remarks on the superiority of our horses, from a French writer:—

"It is scarcely two years ago that we were greatly superior to them in this respect, and that Henry the Fourth sent to Queen Elizabeth some beautiful horses, from the stud at Berri, which were much finer than any that England possessed at that period. We have

also seen in our own time, Bourgelat and Chabert send stallions from Normandy into England, of an excellent quality, which were disregarded by us, and undervalued, but which the English, who were better judges than ourselves, knew well how to appreciate. We are at this day behind hand upon this point with almost all the rest of Europe. Above all, the English have not only far surpassed us, but they have had the address to profit by our negligence and our indolence, to which may also be added, our ignorance, in turning to their own use horses which we despised, or of the properties of which we were incapable of forming a just estimate. The stallion known by the name of the Godolphin Arabian, was bought at Paris for eighteen louis-d'or, as a horse of little value, and from which we had obtained no stock. He produced afterwards in England, Babraham, Mask, Regulus, and several other excellent race-horses; for the descendants of which we have since paid enormous prices. It is therefore to be hoped, that as we become more enlightened, and more sensible of our true interests, and favoured by the beauty of our atmosphere, and the salubrity of our climate and our pasturages, we shall hasten to regain what we have lost by our apathy, and employ in the improvement of the breed of our horses, those excessive sums which we are obliged to export in the purchase of those of which we are in want.

"The English horses are the most celebrated in Europe, but their establishments for breeding being not so complete as ours, and their climate in no part of it to be compared to the south of France, we evidently have many advantages which they do not possess.

"The crossing of the Arabian and other Asiatic horses with the English breed, and the farther cross-

ing of their produce with each other, has naturally produced a division into five classes, which are very distinct, and have been well preserved.

"The first is the race-horse, proceeding directly from either an Arabian or Barb with an English mare that has been bred by a similar crop. This is what the English call their highest blood.

"The second is the hunter, arising from a blood-horse and a half-bred mare. This class is very numerous; they are stronger than the first, and capable of undergoing great fatigue.

"The third is the result of a cross of the hunter with mares of a more common description—these constitute the coach-horse. It is from these two classes that the English export so many throughout Europe, and particularly to France.

"The fourth is the draught-horse, the produce of the former with the strongest mares of the country. There are some of this breed of the greatest size, and in their form and character not unlike the horses which are seen cast in bronze.

"The fifth has no particular character, being the result of accidental crossing among the rest. Still, notwithstanding this mixture, the influence of the Arabian blood may be traced in some degree even amongst the most common sort.

"The English have procured Arabian horses, and have devoted the greatest attention and care to their system of breeding, particularly by publishing the genealogy of those which they considered as their best produce. They have well understood the importance of this publication, for by these means, they have been able to have recourse to stallions and mares that approached the nearest to the original blood, for the purpose of breeding, and thereby to preserve the breed from degenerating.

"Such is the state of breeding-horses in England, where they pretend that they have no occasion to return to Arabian horses—an opinion which appears to be founded rather on the estimation in which the English hold their own breed, or the fictitious value which they wish to put upon them, than upon fact.

"The race-horse is in England a grand object of luxury and expense. Many rich families have been ruined by the enormous wagers which take place at their races, as well as the expense of keeping the horses. It will hardly be believed that they have carried their system to such an excess as to cover *whole fields with sand*, in order to produce a more delicate herbage, and more assimilated to that which grows in Arabia, from whence the blood of these race-horses originated, from the apprehension that the coarser sort of grass would affect their wind; and that five or six grooms, at six guineas per month each, are employed to take care of one horse, and that they warm the water for the horse to drink in winter, with other ridiculous customs unknown even to the Arabs."

ON UNSOUNDNESS, AND THE PURCHASE AND SALE OF HORSES.

THERE are few sources of greater annoyance, both to the buyer and the seller of the horse, than disputes with regard to the soundness of the animal. Although in describing the various parts of the horse, we have glanced at the connexion of certain natural conformations, and some alterations of structure and accidents, and diseases, with the question of soundness and un-

soundness, it may not be uninteresting to those for whom our work was designed, if we now bring into one point of view the substance of that which has been scattered over many pages.

That horse is sound in whom there is no disease, nor any alteration of structure in any part which impairs, or is likely to impair, his natural usefulness. That horse is unsound that labours under disease, or that has some alteration of structure that does interfere, or is likely to interfere, with his natural usefulness. The term "natural usefulness" must be borne in mind. One horse may possess great speed, but is soon knocked up; another will work all day, but cannot be got beyond a snail's pace; one with a heavy forehead is liable to stumble, and is continually putting to hazard the neck of his rider; another with an irritable constitution and a washy make, loses his appetite, and begins to scour if a little extra work is exacted from him.

The term unsoundness cannot be applied to either of these; it would be opening far too widely a door for disputation and endless wrangling. The buyer can discern, or ought to know, whether the form of the horse is that which will render him likely to suit his purpose, and he should try him sufficiently to ascertain his natural strength, endurance, and manner of going. Unsoundness, we repeat, has reference only to disease, or to that alteration of structure which is connected with or will produce disease, and lessen the usefulness of the animal.

These principles will be best illustrated by a brief consideration of the usual supposed causes of unsoundness:—

Broken Knees.—Capped Hocks.—Contraction of the Foot. — Corns. — Cough. — Roaring. — Wheezing.—

Whistling.—Highblowing.—Grunting.—Broken Wind.—Crib-biting.— Curbs.— Cutting.— Enlarged Glands.—Enlarged Hocks.—Inflammation of the Eyes.—Lameness, from any cause whatever.—Neurotomy.—Ossification of the Lateral Cartilages.—Pumiced Foot.—Quidding.—Quittor.— Ringbone.— Sandcrack.— Spavin.— Blood Spavin.— Splent.— Stringhalt.— Thickening of the Back Sinews.—Thorough Pin.—Thrush and Windgalls.

Any of these constitutes a horse unsound; consequently it has been deemed necessary that the buyer and seller should enter into a specified warrantry—which is generally thus expressed:—

Received of A. B. forty pounds for a grey mare, warranted only five years old, sound, free from vice, and quiet to ride and drive.

£40. 0. 0. (Signed,) C. D.

When the receipt contains merely the word "warranted," it extends only to unsoundness: "warranted sound," has only the same meaning. The age, freedom from vice, quietness to ride or drive, and other requisites, should be particularly specified.

This warrantry extends to every cause of unsoundness that can be detected, or that lurks in the constitution at the time of sale, and to every vicious habit which the animal has hitherto shown.

To establish a breach of warrantry, and to be enabled to return the horse or recover the price, *the purchaser must prove that it was unsound, or viciously disposed at the time of sale.* In case of cough, the horse must have been heard to cough previous to the purchase, or as he was led home, or as soon as he had entered the stables of the purchaser. Coughing even on the following morning will not be sufficient.

ON INHUMAN TREATMENT OF THE HORSE.

An eminent author makes the following remarks on the inhumanity practised towards the horse by those into whose hands he often falls, and with which we shall conclude this portion of our work.

" The object of our profession is to mitigate or remove the pains and diseases of those who have, although our slaves, common feeling with us. Can we honestly, heartily, successfully employ ourselves in this, if we do not sympathise with them? if we do not love to see them happy, and contemplate their sufferings with regret? Can the brute who regards them as mere machines, devoid of rights, placed without the pale of justice, created merely for our purposes, and to be sacrificed without crime to our caprices; can he by possibility, so identify himself with his profession, as to neglect no opportunity to mitigate pain, and to spare no exertion to increase enjoyment? This is the duty, and ought to be the pride and pleasure, of every veterinary surgeon. Regard to reputation, and sense of duty to our employer, are powerful principle of action; but there is another as powerful, which the scenes we daily witness, and the means by which we live, should form and establish sympathy with the feelings of our patients. What! with the feelings of brutes? Yes—brutes as we call them, but who possess, in common with us, attention and memory, and imagination, and reason, and ideas of reflection, and feelings of gratitude, and truth, and duty; in fact, all those intellectual and moral powers differ from ours, not in kind, but merely in degree.

" Dare we trace the education of the veterinary surgeon as far as humanity is concerned? See him at

the college attending a necessary, but severe operation, jostling and wrestling with his fellows for the best view; execrating the struggles of the agonized animal and mocking its groans; not one expression of commiseration heard from a considerable proportion of the spectators; not one calculation how far a part at least of the torture may be saved, consistently with the object of the operation. The loud laugh and the ribald joke drowning the voice of the operator—or the operator himself, when not too much annoyed by the shameless indecency of the scene, pausing in the midst of his work, and joining in the laugh. We have sometimes thought that if a stranger were present at this unnatural exhibition, he would imagine that we were training for purposes of brutality, and not of humanity, and be very cautious how he entrusted a valuable and generous animal to our tender mercies; and sure we are, that scenes like these are more calculated to train us to become butchers than surgeons; and hence in a great measure it is that so many of our operations are performed in a butcher-like and unprofessional manner. We are aware that one of the most important requisites in a surgeon is perfect self-possession; and that the feelings of the patient should for a moment merge in the important object of the operation: but this is different from those exhibitions in which there is no previous comparison of suffering and advantage, and no subsequent commiseration. It cannot be denied, that circumstances do sometimes attend the operations of veterinary surgery, which would meet with universal execration in the theatre of the human surgeon: the inevitable consequence of this on the mind of the young practitioner has not been sufficiently calculated; or rather the error has been that we have not felt ourselves bound to regard the

feelings and the sufferings of the quadruped given to our care.

" A more protracted residence at our places of veterinary tuition, by bringing young men of superior stations in life, and better previous education, will, by degrees, correct these principles and habits which too much characterize and yet disgrace the groom and the smith.

" Practice alone, founded on anatomical knowledge, can give expertness in operation. The human surgeon practises first on the dead subject, and his instructor or his senior standing by, can explain the reason, the importance, or the danger of every step. The veterinary pupil has advantages far superior to those which are enjoyed by the student of human surgery. At the knacker's he finds a constant supply of dead subjects, and he procures them or the parts he wants at a cheap rate. But this does not satisfy him—he *vou faucibus hœrat !* with fewer operations generally to perform, and still fewer of importance, practises on the living subject. A knot of pupils go to the knacker, they bargain for some poor condemned animal, they cast him, and they cut him up, and torture him alive. They perform the nerve operation on each leg, and on each side they fire him on the coronet, the fetlock, the leg, the hock, and the round bone ; they insert setons in every direction; they nick him, they dock him, they trephin him: when one is tired of cruelty, another succeeds ; and at length, perhaps, they terminate his sufferings by some new mode of destroying life. Did the Coopers, the Greens, the Brodies of the present day, thus acquire precision and judgment ? or if they had, would they not have been supposed to have been qualifying themselves for the office of familiars at the inquisition, rather than of humane surgeons ? Would

they not have been detested while living, and held in lasting execration when dead? But these operations on the living subject teach the youngster how to accommodate himself to the struggles of the animal, how to feather his lines with mathematical exactness, and to acquaint himself with the true colour produced by the iron when it has seered the skin sufficiently deep! Would not one or two operations on the real patient have given all that would be necessary, without engaging the conservators of the health and enjoyment of the horse in the functions of demons, and giving them an indifference to suffering and a callousness of feeling which taints the whole course of their after practice?

That school wants reform which, by the dearth of operations that are committed to the pupils, tempts to the commission of atrocities like these. Every pupil after having been compelled to operate once or twice or thrice on the dead subject before the professor, should in his turn be called on to operate on the different cases which are brought to the college. Under the immediate inspection of the professor there could be no danger to the patient; and one operation, every step of which was guided and directed by the professor, would be more useful to the student than a hundred at the knacker's yard; but according to the present system, nearly all the operations are performed by the assistant-professor, and the demonstrator and the pupils are permitted only to look on. Some alteration is here imperiously required.

THE COW.

Among the quadrupeds with which the earth abounds, none appears to be more extensively diffused than the cow; as it is found either large or small, in proportion to the quantity and quality of its food, in every part of the world, from the polar circles to the equator. The life of this animal extends to about fifteen years; and its age may be ascertained with tolerable facility, as at the age of four years, a ring is formed towards the root of the horns, and each succeeding year adds another. There is no animal so liable to alteration from the quality of the pasture. Thus, Africa is remarkable for the largest and the smallest cattle of this kind, as are also Poland, Switzerland, and several other parts of Europe. Among the Eluth Tartars, where the pastures are remarkably luxuriant, the cow becomes so large that few men can reach the tip of its shoulders; but in France, where the animal is stinted in its food, and driven from its natural pasturage, it greatly degenerates.

The cow has seldom more than one calf at a time, and goes about nine months. There is scarcely a part of this animal that is not useful to mankind: its milk

forms a rich and nutritive aliment for the human species, and gives to our tables the important articles of butter and cheese; and of late years, benefit has been derived even from one of its diseases, by the introduction of vaccine inoculation, an antidote for that horrible and deadly disorder, the small-pox.

Such are the advantages derived from the cow, that we may almost be induced to admire that superstitious veneration which the Gentoos entertain for an animal to which they are under so great obligations. To such a height, however, do they carry their reverence, that there is scarcely a Gentoo to be found that would not, were he under a compulsatory option, prefer sacrificing his parents or children to the slaughtering of a bull or or cow.

THE COMMON OX.

From this well known and useful animal are derived the numerous varieties of common cattle found in various parts both of the old and new continent. In its wild and native state it is distinguished by the depth and shagginess of its hair, which about the head, neck, and shoulders, is frequently of such a length as almost to touch the ground; and it grows to such an enormous size, as sometimes to weigh sixteen hundred or two thousand pounds.

The horns are rather short, strong, and sharp-pointed, and stand distant from each other at their basis. The colour is generally either a dark or yellowish-brown. The limbs are very strong and muscular, and the whole aspect gloomy and ferocious.

Wild oxen are principally found in the marshy forests of Poland, among the Carpathian Mountains in Lithuania, and also in several parts of Asia. It is also said that cross or breed of wild cattle, (probably the only remains of that species in England), is yet left in Lord Tankerville's park, at Chillingham, near Berwick-upon-Tweed. Their colour is invariably white, with the muzzle black; and the whole inside of the ear, and about one-third of the outside, from the tip downwards, red. Their horns are white, with black tips, remarkably fine, and bent downwards. The weight of the oxen is from thirty-five to fifty-five stone; and of the cows, from twenty-five to thirty-five, fourteen pound to the stone. Their flesh is said to be finely marbled, and of a peculiarly excellent flavour.

When these animals perceive any person approaching, they set off in full gallop, and at the distance of two or three hundred yards wheel round, and come boldly up again, tossing their heads in a menacing manner; they then stop suddenly at the distance of forty or fifty yards, and look wildly at the object of their surprise; but on the least motion they will turn round and gallop off with equal speed, but to a shorter distance, forming a smaller circle, and again returning with a more threatening aspect than before, they approach much nearer probably within thirty yards, when they make another stand, and again gallop off. This they repeat several times, shortening their distance, and advancing nearer, till they come within a few yards, when it is advisable to leave them, as in a few turns more they would probably make an attack.

The ancient mode of killing these animals was very singular. On notice being given that a wild bull would be killed on a certain day, the inhabitants of the

neighbourhood assembled, sometimes to the number of a hundred horsemen, and four or five hundred foot, all armed with guns or other weapons. Those on foot stood upon the walls, or got into the trees, while the horsemen drove off a bull from the rest of the herd, until he stood at bay, when they dismounted and fired. Sometimes on these occasions twenty or thirty shots have been fired before the animal was subdued; in which case the bleeding victim grew desperately furious from the smarting of his wounds, and the shouts of savage exultation echoing from every side.

But from the numerous accidents which happened, this dangerous practice has been disused of late years.

It has been remarked, that when an individual of this species happens to be wounded, or is grown weak and feeble through age or sickness, the rest of the herd sit upon it and gore it to death.

The oxen of India are generally small, with short blunt horns, and humps on their shoulders. They are used in drawing chariots and other carriages, and will perform a journey of twelve or fourteen leagues a-day. Their ordinary pace is a brisk, but remarkably easy trot. Instead of a bit, a ring is passed through the cartilage of their nostrils, to which is fastened a cord that serves as a bridle. Those belonging to nabobs, and other great men, have their horns gilded, and are richly decorated with embroidered trappings.

The skin of the ox is made into several kinds of leather; the hair is valuable in various manufactures; the horns are wrought into boxes, combs, knife-handles, drinking-vessels, &c.; the bones afford a cheap and excellent substitute for ivory; glue is made of the cartilages, gristles, and the finer pieces of cuttings and parings of the hides; the sinews are converted into a fine kind of thread, used by saddlers and others; the

feet yield an oil of great utility in preparing and softening leather; and the importance of the suet, fat, and tallow, is well known.

THE KYLOE OX.

This is a Scotch breed of cattle, chiefly of a black colour, with thick hides, much hair, and frequently large horns. They fatten well, and frequently attain a great size. The name of Kyloe is said to be derived from their having crossed the Kyles, or ferries, with which the highlands of Scotland abound.

FOR THE GORGET, PLAGUE, OR MURRAIN, IN BULLS, COWS, OR OXEN.

Most authors confound these distempers together; but whether they be the same, and only differ in the degrees of the malignity, I cannot determine; but commonly the same remedies are proposed for both, though the Gorget sometimes appears in the head, and sometimes in the hinder parts. When it is in the head, it is known by the swelling of the eyelids, blisters on the tongue, &c.; when in the mane, by drooping and heaviness, panting of the heart, hanging down of the head, costiveness of the body, &c.; and when behind, he will be very stiff, and his guts rumble.

If blisters be on the tongue, take them off with a sharp knife, and slit the tongue underneath an inch

long, but not deep, and an infectious water will run out; then wash with vinegar. If it be in the mane, or behind, let blood in the neck-vein; and for either of these distempers give the following drink, or that which is mentioned hereafter for the Murrain, which have been recommended much by those who have often experienced them.

Gorget.

Take polypody of the oak and burdock-leaves, of each a handful; for want of the leaves, take the same quantity of the roots, shred them small, and put them into a pint of milk and boil them; let them cool, strain it, and give it to the cow.

For the head-gorget, give powder of senugreek, turmerick, liquorice, anniseed, of each one ounce; of long pepper, half an ounce; beat all to a powder, boil it in a quart of ale, giving it blood-warm.

For the Murrain.

For the signs of it *see above*.

For the cure, take unslacked lime, coriander-seed, marjorum, and garlic; beat all to powder, and sprinkle it on coals, letting the fume of it go up the beast's nostrils, it will bring away a great deal of the infectious humour.

Take plantain, rue, southern-wood, shepherds-purse, smallage, coleworts, of each a handful; bruise them, and with a handful of hen's dung, lay them in steep in a pint of old wash eight hours; strain the liquor, and add a quart of ale to it; put it on the

fire, consuming it to one half, and put into it an ounce of treacle, a spoonful of juice of garlic, half an ounce of anniseed, and the like quantity of liquorice, and give it lukewarm.

For the Worm in the Tail.

This is a distemper that breeds in the end of the cattle's tails, like unto an eating canker, which will cause them to grow lean, and so weak in their backs, that they cannot rise when down, and sometimes will make their teeth loose. You may know them by the hair being eaten off where the worm lies, and you may, by feeling with your finger, find some of the joints eaten asunder.

To cure it, take foot, rue, stamped salt, and butter, and mix them well together, and apply it to the tail, having first slit the inside of it about two or three inches long, just above where the joint fails, and rub her teeth with juice of oranges, or juice of sanvy-grass: you may likewise give her the following drink for inward distempers.

For any Inward Disease in Cattle.

If you cannot find out what the disease is, take a quart of ale, wormwood, rue, and rosemary, of each a handful; bruise it in a mortar, boil it, and strain it, adding to it two spoonsful of juice of garlic, and as much London treacle; mix all well together, and give it lukewarm.

To know if any distemper is growing upon them, view the top of their noses in the morning, and

if pearls like drops of dew hang upon them, they are in health; but if they are hot, dry, and scurfy, some distemper is beginning to grow.

For any Imposthume, Boil, or Swelling.

Take lily-roots, boil them till they are a pap in milk, and apply it hot to the sore. When the sore comes to be soft, you may open it with a hot iron, if you find need, and heal it with tar, turpentine, and oil, mixed together, adding a little hog's-lard to it when boiling hot.

To Kill Worms.

Chop savin small, and mix it with sweet butter, roll it into balls, and give it for two or three days; afterwards give him about a pint of sweet wort, in which dissolve a little black soap, and it will bring them away; keep him warm after it, giving him warm water, and without meat three hours.

Bleeding a Cow.

Except it be in an extraordinary case, never take above a pint of blood from a milch cow at a time.

For a Looseness, or Bloody Flux.

Take some sloes, boil them in a little water, and add some powdered chalk, and a little quantity of whitning to it, and put it when cold into the water the cows drink

WINTER FATTENING IN THE STALLS AND OTHER PLACES; OR, STALL FEEDING NEAT CATTLE

This is the practice of fattening cattle in the winter season on different sorts of moist and dry substances, instead of grass. It was formerly a disputed point, whether such stock could ever be advantageously fattened when tied up or fastened in stalls or other places; but numerous facts, the results of extensive trials, have now most satisfactorily, and in the fullest manner, proved that it is the best and most beneficial method that can be had recourse to for the purpose at that time of the year; and that from the great utility of it, some practice of the same, or a similar kind, should even be more resorted to in the summer keeping of cattle than has yet been the case, as has been shown in the preceding section.

In this sort of fattening, great care and attention is necessary in many respects, as will be fully described hereafter; but the most convenient, least wasteful, and the best method of forwarding the condition of the beasts, and completing the business, is, most probably, that of not wholly confining them to the stalls or houses, but letting them out occasionally. For instance, when the weather is suitable, they should

be turned out two or three times in the day into the yards, in order that they may indulge more fully in their natural habits, that their desire for food may be sharpened, and the danger of being disgusted or cloyed with it avoided; by which regulation, they will feed or take on flesh and fat in a more ready manner, and the process of fattening be more expeditiously and perfectly effected.

The large breed of short-horned cattle are generally the most proper in this intention, and stand the practice in the best manner.

Modes of Feeding in this way.—In winter fattening beasts of the neat-cattle kind, there are several different methods pursued in different districts and parts of the country; in some (in the more southern parts especially,) it is a common practice to have food, when of certain root sorts, eaten by the stock, upon some perfectly sound, dry, and convenient portion of sward and stubble land, to which it is taken for the purpose. This method can, however, be only made use of in cases where such sorts of lands to some extent prevail, and where the smaller sorts of such stock are employed, as there are but few instances of ground being so free from wetness at this time of the year as not to be greatly injured and broken up by the treading of heavy cattle. Less perfect managers in some places, leave the crops of such kinds so as to be eaten by the cattle on the land, but which, in all cases, is a bad and wasteful practice. The method which is the most useful, and attended with the most advantage, is, therefore, in all probability, that of feeding the cattle in the stalls or shed-houses, connected with suitable yards for turning them into occasionally as may be necessary; though that of confining them wholly to the stalls is in the most common use, as in all the ways

of feeding or fattening such stock on the ground in the fields, there is the almost insuperable objection of the loss of so much rich and valuable manure as must always be formed in such cases. Besides, from the greater exposure, and other circumstances, the cattle cannot possibly thrive so well. In some cases of this practice, the cattle are at first only brought to the stalls during the night, but afterwards constantly tied up in them.

Time of Beginning and Continuing the Practice.—It is usual to begin this method of feeding about the time when the pastures and aftermath grasses fall off in their supplies of food, or are quite finished; as towards the end of the first winter month, continuing during the whole of the commencement of the practice is, therefore, precisely when cattle can in general be the most readily brought in and procured for the purpose; and the termination of it, that at which beef usually brings the best price in the market, and the stock, of course, sells the highest, which are advantages in its favour of some importance to those engaged in the business.

Suitable Sheds, Stalls, and Yards, for the Purpose.—The houses or buildings and stalls for this use, are, in general, badly contrived in several respects, being in common too much exposed in their nature and situations to cold winds and rains, which have a great deal more effect in checking and retarding the thriving and fattening processes than is usually supposed, as a due degree of warmth may fairly be said to be as necessary in these matters as that of the food which is consumed; for, in nearly the same degree as such effects of the weather are prevented, will the cattle get forward and become fat. Too little attention has been bestowed upon the natural habits, constitutions, and disposinons

of the cattle, in construction and fitting up of such buildings and places; while vast expense has often been incurred for contrivances which have no relation whatever to the economy of the animals. Among the latter are what are frequently termed keelers, for holding water, fixed up in each stall, and to each of which the water is separately conveyed by pipes or other means; they are mostly of the same size and capaciousness as the mangers for containing the different roots and other such matter, and the separate divisions for meals, oil-cakes, bran, chaff, and other such like substances, without their being intermixed, and are put up to some proper height level with them in the fore-parts of the stalls, just before the heads of the beasts, for the ease and convenience of their feeding, as well as to prevent the labour and trouble of letting them loose and taking them to the water. But the natural habits of cattle are to take their food of all sorts from the surface of the ground, and their water from ponds, pools, and rivers or brooks, which method is the most favourable to their health, and of course to their thriving and feeding or fattening. They do not stand in need of any such costly accommodations or contrivances, but eat their fodder and provisions more keenly, and with better effect, when laid on the ground, or from low situations, than when put in such mangers, boxes, or troughs, as the results of the most careful and exact trials have fully proved. Besides, there is less smell and nastiness produced in this way than by such confined contrivances; and both the taste and smell of neat-cattle are extremely acute and nice. It is, consequently, only necessary to have proper shallow spaces for holding the provisions and fodder nearly even with the surface of the ground, with moveable divisions, so that the whole may be readily

and well swept, washed, scrubbed, and cleaned out daily, or oftener if needful: and with respect to their water, the beasts should take it while loose in the yards, at the ponds or other places.

The divisions for the stalls in such buildings should be rather roomy, about ten or more feet in width, not being closed in the upper parts, in which two beasts may take their food while fastened up for the purpose, the floors or bottoms being formed so as to slope gently backwards to the heels of the cattle, where there should be a step six or eight inches high, with paved gutter, two feet or more in width, for receiving and conveying off the urine, and other liquid matters, as they drain from the stalls.

In connexion with these feeding-houses and stalls, there should be proper and convenient littered yards, with ponds, or other watering places in them, for receiving and conveying the fattening cattle when not tied up in the night-time and bad weather. The best manner of constructing such yards has been already stated, and their utility and benefit in such sorts of feeding sufficiently shown; though they have been objected to by some, on account of the great waste of food where used without such houses and stalls for giving the cattle their food in, and for protecting them in cases of cold and bad seasons. The waste, when fed loose in such cases, has been stated to be prodigious; nine beasts in this way having been found to eat and destroy as much hay as twelve tied up; it must be noticed, however, that there is not the least doubt that cattle eat more when loose in such yards, than when tied up in close stalls, and fed in the usual manner, so that the real waste is less than it first appears to be. But the utility and convenience of such yards is obvious in connexion with the feeding-houses for turning the cattle into oc-

casionally in the daytime for the purpose of air and exercise, whilst their stalls and houses may also be more completely aired and sweetened, as well as more thoroughly cleaned out.

It has been well observed, that in or near such feeding-stalls and yards, the weighing machine is always a necessary and useful apparatus in this method of fattening cattle, in order that it may be almost instantly known what is the state and progress of the animals, and that the improvement in them and the expense may be compared, or the flesh and the food necessary to produce it. By this means, a neglected inquiry of the greatest importance has been laid open, which is that of finding out the breed of or variety of neat-cattle which gives the *greatest* quantity of *flesh* with the *smallest* quantity of *food*. No complete building and yard of this sort, on any considerable scale, should ever, of course, be without such a contrivance, as without this sort of assistance there are but few able to decide correctly whether the cattle go on profitably or the contrary; while by the use of it, at short intervals of time, when the beasts are the most empty, this point may be perfectly determined, and the management of the animals in all respects be regulated in the best way for effecting their fattening.

Principles on which the Fattening process depends.—In the process of fattening animals, a somewhat larger proportion of food than that which is exactly necessary and proper for supporting them and keeping them in good condition, is constantly required, in order that a greater quantity of the nourishing material may be prepared from it, and converted into blood, and the substances are to be laid on or added to their several parts in the form of flesh and fat; which is a circumstance that would seem to depend materially upon

regularly and steadily keeping up the stimulus and action of their bodies to that high state, by proper rich fodder and keep, which has a tendency to cause a sort of dulness, weariness, and inactivity in them, these being the states most favourable for rest, sleep, and quietness, which numerous facts and long experience have fully shown to be the most suitable and proper for depositing or laying on flesh and fat in those parts of their bodies which are destined for them. Of course, it follows, that the manner of giving and distributing the food in such cases, must have great influence and effect in promoting or delaying the feeding or fattening process; for if the greatest nicety and attention be not had recourse to in such matters, much loss may easily take place, particularly when the richer and more costly sorts of keep of whatever kind, are employed. As in consequence of the very large proportion of fluid matter, which is produced and collected in it, from so much juicy and rich food being consumed, a very great mass of such littery substances are speedily collected, and capable of being decomposed and brought into a state of manure by the constant operation of such moisture with the heat which mostly prevails. Therefore, in cases where proper supplies of straw for this use cannot be had as they may be wanted, it becomes highly necessary to provide sufficient quantities of other suitable matters in the winter season, or at other times. Many different substances are capable of being used in this way, such as the stubble of tillage ground; fern from heaths, commons, and other places; sea-ware or tangle from the banks of coasts; aquatic weeds, of various kinds, from the sides of rivers and ponds; and a variety of other such matters should be collected, and cut together in their dry state, when abundant, in order to be stacked up near the yards for this use at a

future period. Besides these vegetable substances, several earthy matters may sometimes be employed with much benefit under the litter, such as reduced peat earth, mould of the loamy kind from fresh banks, different sandy materials, and other such bodies, all of which are very powerfully acted upon and decomposed by the various gaseous and other matters which are formed and set at liberty during the decomposition and reduction of the several littery substances deposited in such feeding-yards.

Application, Utility, and Particular Benefits of the Practice.—This method of management is useful and well suited for the keeping of neat cattle in general; but it is more particularly beneficial and better adapted to some cases and circumstances than others. It is quite suitable and convenient where the grass pasture lands are of the more soft and poachy kind, and the stock of the large and more heavy sorts, as tending to such pasture grounds in that condition which is the most desirable and advantageous, while at the same time the cattle are well brought forward, kept, and supported. The same is also the case where the extent of pasture is small, while that of the tillage is large, and the quantity of neat cattle stock considerable, as such stock can in this way be well supplied with food from the arable part without having recourse to the grass portion. Indeed, in cases where the lands are wholly arable, this is probably the only practice from which such great and extensive benefits and improvements can result, as furnishing the means of further amelioration, and a more full and abundant produce, at the same time that the cattle stock are fed in the best manner and kept in the most perfect condition.

In cow-keeping, or dairying, whether for the pro-

viding of milk in general, or for its different products, or for its sale in different situations and places, it is a practice also of prodigious utility and advantage, especially near large towns, where proper pasture-lands are scarce and of high value, as more supplies of milk are perhaps afforded in this method of keeping milch cows in the summer months, than in any other. It has been applied in this way in many parts of the country with very great convenience and advantage, both in increasing the quantity of milk and in keeping up the condition of the cows.

In the summer fattening of cows, as well as other beasts, there has been much benefit also derived from this practice in different cases, where the several plants and roots noticed already have been used in the manner directed above. With many of such substances, as well as with plants of the cauliflower and early spring cabbage kinds, where they can be well grown, beasts have been fattened in a very speedy manner, and the finest and best flavoured beef produced from such food, other suitable matters being combined and given at the same time with them.

MOST BENEFICIAL MEANS OF GRAZING.

In grazing cattle with a view to profit, three points or circumstances should be particularly attended to; which are, first, to raise a full quantity of artificial grass for hay and aftermaths: secondly, to turn a large quantity of ground into rich pasture by feeding it, dunging it, and laying on it other proper sorts of manure, to bring it into suitable order and fit for raising the

bullock or heifer in flesh and condition in the spring, when they come first from hay to grass, and in order to receive them with a vigorous aftermath when other grass, as the clovers and the second crops of aftermaths, go off: and, thirdly, to provide hovels, sheds, or other buildings, enclosed with not too confined or close walls, to shelter the cattle from winds and heavy rains. By adopting and pursuing these methods in pasturing neat cattle on the feeding-grounds, the grazier, from having plenty of hay, will be enabled to purchase barren beasts before the spring grass comes in, when they are cheap, and may be bought to much advantage, allowing for the value of the hay they may eat; and if by winter haying some meadow ground, after it has been kept high in heart by feeding, and other management, he can early in the spring by such means take off such grazing beasts from hay to grass before the clovers can be ready, it will be advantageous in many places, as they are often as late as the second week in May; and then by keeping such meadows for an aftermath, which, towards the end of summer, are in very good heart, he may support his bullocks and carry them on when the strength of other grass fails. All fattening cattle, whether barren cows or oxen, require a proportional progression from coarser to finer and better food, or keep, as they grow more and more into good flesh and condition; otherwise, when half fat, they will frequently go back, when the grazier cannot, without great difficulty, raise them again, which of course is a great loss of profit. Every kind of feeding-pasture is fitted to raise animals to a particular size and condition of flesh; but the larger the breed, the richer and sounder should be the soil, and the fuller and more abundant the produce.

Water Necessary in Grazing Neat Cattle.

Good water is of the utmost consequence in rearing and fattening neat cattle; and those graziers will never meet with much success or profit whose grounds do not abound with a continual supply of this fluid; indeed beasts cannot thrive well without it, though the grass should be in the greatest abundance. Bullocks require a large quantity of water to dilute their food, and in the summer time delight to chew the cud in pools or rivulets, where they may enjoy a cool retreat, and with alternate vibrations of their tails defend themselves from the troublesome attacks of the flies, gnats, and other insects which infest them. Ponds, rivulets, or other contrivances for retaining water, are absolutely necessary in all sorts of feeding grounds.

Systems, or Modes of Practice in Grazing.

In some feeding situations, places, and districts, where they are in the practice of preferring open or spayed heifers, and other barren kinds of stock, to oxen, the beasts are brought in as convenient and proper for the purpose in March, or the following month; and after being kept and pushed well forward through the summer season, when having been well fed out, they off are sold in October and the succeeding month. This method is not so convenient or ready as some others, but is considered by some persons to be profitable in its nature.

A second and more usual method of practice in this business, is that of buying the beasts in lean as soon as the grass-feeding lands are in condition to be turned

upon, that is in May or earlier, and wholly completing the fattening of them on the pastures towards the latter end of October, or later, according to their quickness in feeding. In this practice of summer-pasture fattening stock, the smaller breeds and sorts of good feeding neat cattle, will probably be the most beneficial, except where the pastures are of the more rich and luxuriant kinds, and it is more convenient and profitable than some of the modes noticed below. A third mode of feeding or fattening this sort of stock is occasionally had recourse to, which is that of buying in the stock at such periods of time as that in proportion to the differences in their sizes, kinds, and properties for fattening, they may be ready to be sold off about the beginning of April, or very early in the following month, at which times they commonly bring a remunerating price to the grazier. In this mode of practice, large oxen, or other kinds of beasts, may be kept through two winters, giving them only one summer's grass; not feeding them so fully or well in the first winter, but keeping them in good feeding grass pastures in the ensuing summer season. In the second winter they should be forced on with the best house or yard-feeding, so as to be ready early in the succeeding spring. But with smaller-sized sorts of such stock, one summer's grazing, and a winter's stalling or yard-feeding, is the common practice in such cases, the stock being bought in as early in spring as the grass has risen to a good and full bite; these are, in general, less beneficial practices than either of the two methods that have been already noticed, and probably less so than that with roots in combination with grasses and pasture-feeding as described below.

A still further mode, is that of buying in neat cattle stock at the fairs or markets in the end of the autumnal

or beginning of the winter season; namely, the latter part of September, or early in the following month, and that of November, chiefly keeping them through the remaining winter months on straw mixed with a little hay until about the beginning of March; then continuing to push on their fattening through that and the succeeding month by some sort of rich juicy food or keep, such as the common or swedish turnip, the carrot, parsnip, beet, and potatoe, in connexion with cut lucerne, tares, or other artificial grasses, until the natural pasture grasses be in a fit state or condition for being turned upon in an early part of May; on these they may be carried properly forward, and completed in their fattening out, according to circumstances, either in August or the succeeding month.

There is another mode of practice of this nature, that is deserving of particular attention in a local view, which is, that of buying in small-sized neat-cattle stock, as those of the herd or other quick-feeding little kinds, which are in forward or tolerably fair condition, in the early autumn, as soon as the after-grasses or aftermaths are ready for the purpose of fattening them out upon those grasses, and selling them off towards the latter end of October or early in the succeeding month. This is a method of management which is not unfrequently pursued with success in many rich hay districts throughout the kingdom, and especially in the vicinity of the metropolis.

There may be some other systems of this sort of management in use for feeding and fattening neat-cattle stock in particular situations and places, but these are the most usual, and may be sufficient to show the nature and means of effecting the business under different circumstances.

Manner of Selling or Disposing of Fattened Neat Cattle Stock.

In the business of selling off neat cattle after they have become fat and fit for market, much nicety and attention is required, in order to effect it in the best manner. The most advantageous and proper times for effecting the business, where there is a choice, the most suitable and convenient markets or places for the purpose, and the most economical and ready, as well as the most favourable and least troublesome modes of accomplishing the desired object, are all to be well weighed and fully considered. Then the proper worth of the beasts are to be fixed upon, which is mostly done by the eye and feel where the seller has had sufficient experience, but the most expert in this way are often greatly deceived. Some sort of direction and judgment may be obtained by carefully attending to the length of time, and nature, and manner of fattening in the stock while they were at grass in the pastures; but the best and only true and real method of ascertaining the point, is by the occasional use of the cattle weighing-machine. In this way, by a carefully exact comparison of the living with the dead or carcase weights of the animals, their value may be sufficiently well known. It is by the numerously repeated comparisons of the living with dead weights of such stock, that the butcher, in many instances, has so much the advantage of the grazing manager in deciding on the worth of animals, whether in the lean or fat state, as by practice his knowledge is more perfect and exact.

There are other points in this sort of management in which the occasional weighing of neat fattening

cattle may also be beneficial, as it may show the different gradations in the progress which they make in different periods of time, and various sorts of pastures, as well as what the effects are of different kinds of food or keep upon them; what sort of changes may be necessary and proper in them; and when it may be most desirable and proper to sell, if markets suit. It likewise may be thus ascertained what is the cost, and consequently what the profit on each of them for their keep. By this method of proceeding a sort of confidence is gained, which cannot be easily acquired in any other way.

The contrivance of the weighing-cage will readily and conveniently determine the living weight in fattening, suckling, or other calves, and may be necessary to the suckling-house.

Soilings, or Summer Feeding and Keeping Neat Cattle in the Houses and Yards formed for such Sorts of Stock.

This is the practice of keeping and supporting neat cattle of all sorts in the spring and summer months on different kinds of green food, cut from the ground daily, or oftener, and given to them fresh in the houses and yards where such stock are kept in such places as are constructed entirely for the purpose, which is probably the best method. The plants of the grass and other kinds which are capable of being used in this way with advantage are very numerous, as being all such as have a quick luxuriant growth, and full nourishing properties, such as lucerne, winter and spring tares, rye-grass, red clover, cow-grass, trefoil, white clover, sain-foin, natural rich grass,

and several other kinds. There are likewise many plants of the root and top sorts that might be employed in the same way with great economy and benefit, as there would be little or no waste, while the beasts would be supported in the best manner, such as those of the carrot and parsnip kind, the several sorts of beets, and perhaps some of the cabbage-plant tribe, as well as others. Less attention has, however, been bestowed upon this practice of giving such cattle stock their keep in the hotter months of the year than its superiority in economy and utility appears to demand. For without attending sufficiently to these points, it has been the common and usual practice in almost every part of the country, to suffer all kinds of this sort of stock to be grazed or fed in the pasture-fields or enclosures, never supposing that there was any other way in which they could be better and more cheaply kept under many circumstances.

Advantages which Recommend the Practice, and Grounds on which it has been Objected to, and Disregarded.

The chief points and circumstances which recommend and enforce this mode of practice, in preference to that which has been in more general use, in many cases, are those of a larger number of what have hitherto been considered useless plants and grasses, as well as such as are well known to be useful, being employed; such food being made use of and consumed with far less destruction and waste; which, of course, makes it go very considerably further in keeping the stock, than when it is eaten off on the land; the support of the cattle being more regular, being attended

to, and more perfect in consequence of their feeding in a less interrupted and inconvenient manner; and their being shaded more fully and effectually from the too great heat of the sun, as well as their being better protected and more free from the attacks of insects and flies. On all these accounts, there can be no doubt, it has a great superiority over the common mode of letting the stock range in all directions upon the pastures. It has been well noticed, that if the food or plants and the consumption of them in this practice be a matter of much regard, it is plain that the benefits and advantages to be thence derived will be of very great and material importance. Since long experience has proved, in the most clear and satisfactory manner, that such sorts of cattle will eat with much avidity many grasses and plants when cut by the scythe, and given to them in such places that they never would touch while growing in the field or pasture; and that whatever may be the cause of it, they eat them, not only without showing any signs of dislike, even if they are not presssed by hunger, but they frequently devour with much greediness, such food and plants, as soon as they have been brought in from the field or pasture where they were feeding, and before they could possibly have had time to become hungry. It is well known, too, that some of the finer grasses and other plants, which, when young, are most palatable, as the food of such cattle are, if once suffered to get into ear, so much disliked by them, that they will never taste them unless forced by extreme hunger; consequently, as in most pastures many of such grasses and plants get into ear from different causes, their produce in such cattle food must be inevitably lost; whereas, if they be cut down by the scythe in proper time, not a single plant of such grasses will be

suffered to get into such a disgusting or nauseating state, and of course no loss or waste will be sustained on such account. Besides, it may be further noticed, that the few such plants and grasses as may be wholly disregarded and loathed by one set or sort of animal, so as to be even rejected by them in the house or yard, will not on that account become less acceptable or desirable to others; but often the contrary. So grass or other such food which has been *blown* or much *breathed* upon by any animals becomes unpleasant and disgusting to any other beast of the same sort, but not so to stock of another kind or variety. Nay, even greater states of taint and injury done to such matters by one sort of animal appear to render the food afforded by such substances more desirable to others; thus, such straw as in the clean state has been refused by neat cattle, if used as litter in stables, acquire such a relish that they seek and eat it with much greediness. In consequence of this, the matters swept up, collected, and cleaned out, from the places where one sort of animals have been kept, in this practice may supply, in some cases, those of another kind with an agreeable sort of fodder, as they can be easily removed from the feeding-place of one to that of another, but which in the field or pasture-method of being fed must be in a great measure lost or wasted.

Several objections have, however, been brought against this practice of foddering and keeping this sort of stock, but probably by those only who have had but little if any experience in this mode, as facts and the results of the most correct and exact trials are uniformly against them. Some persons have supposed that a great objection to it lies in the expense of conducting the business, which they consider a great deal too much. But all the trials which have been made

on the subject with sufficient accuracy, and in a sufficient extensive manner, have clearly shown and proved that, when properly practised, it is capable of being executed at a charge so trifling in proportion to the value of the beasts individually, that no real or solid grounds of objection to this sort of management in such cases can be found.

The practice has been opposed by others on the supposition that the beasts or stock do not thrive so well in it as in pasture-feeding. But as it is well ascertained, that the more quiet, easy, and free from all sorts of annoyance and disturbance, neat cattle are kept, the better and more readily they thrive and improve in their flesh and condition; it is, consequently, not very probable, that fresh-cut green or grassy food when eaten in the sheds or other parts of cattle-yards, will be less beneficial in forwarding the growth and condition of such stock, than when eaten off from the pasture-field. It must be recollected too, that in the pasture-fields the beasts are exposed to the great heat of the sun, and to perpetual attacks of various sorts of stinging and biting animals of the fly or other kinds, and of course are kept in a continual state of irritation and restlessness. The extensive and most minute and correct trials that have been made in actual practice in this way, have, however, proved that the cattle have always thriven better, and fattened more expeditiously, than others of the same kind, size, and age, fed in the pastures, even in the most favourable years and seasons for the purpose. Facts do not, therefore, support such supposition, which appears to have been wholly taken up on conjectural grounds, while every fact and circumstance strongly contradicts it.

There are some others who contend, that cows in milk do not afford that fluid in so abundant a manner

when kept in this manner, as when kept by feeding in the pastures, which, however, is in perfect contradiction to all experience, as will be fully seen below. It is well known, from actual trials, that almost every one of the various sorts of green that have been cut by the scythe, and made use of in this manner, have more full and lasting effects in exciting and promoting the secretion of milk, than the common pasture-grasses. Yet, as there may be some sorts of plant and vegetable productions as well as other matters that may have a more powerful action on some of the glandular or secreting organs of such animals than others, it is not improbable that there may be some kinds of such plants and vegetables that may have a greater effect and more continued influence in promoting this kind of secretion than those of other sorts, so that cows fed on one kind of such food, in this management, may give less milk than when supported in the same way on other sorts; which is also the case in feeding them on common mown grass, and grass of the tare, clover, and other such kinds.

It has been suggested likewise, that this method may be less proper than that of the pasture support of the cattle, in consequence of their feeding or eating the food in a more imperfect manner from their being confined, and wanting the more full and open air, as well as exercise in the field, but where there are proper yards and other suitable contrivances for the purpose, nothing of the sort need take place in this mode of feeding, as they ought not by any means to be constantly kept tied or shut up in a close manner.

There are, therefore, no solid reasons of any kind which can in the least effect the propriety and great utility of the soiling method of feeding, keeping, and management of neat cattle, but it has much to recom-

mend it in the preventing of waste and in making grass land go farther in the supporting of such stock, which are considerations of great consequence in the providing for such animals.

The great superiority of this practice in saving which it produces in the consumption of the food cannot be questioned, as the various extensive trials that have taken place fully prove that it is by such means made to go from two to four or five times as far as when eaten off on the land, and in some cases much more; and in different other trials with natural grass, lucerne, tares, and clover, they have been found, in this mode of use, to be capable of supporting from three to five or six times as many neat cattle in better and more full condition than in the pasture manner of feeding them; and it has been remarked, that in this last method, great waste and destruction must often necessarily be caused by the grass being so much trampled upon, trodden down, dunged on, and in other ways, especially where the quantity of cattle fed together is large; and that of course most or all of such sorts of waste are prevented in this method of proceeding. Besides, the poaching and injury to the land in that way, which is often very great, is in this wholly avoided.

It is not, however, to be supposed that all the waste is by pasture-feeding, and none at all in this way; as by soiling some little waste is occasionally incurred in different manners, as in tare crops that have become podded on account of the bottom parts of them getting course, sticky, or in a state of decay, in consequence of their resting so much on the ground, and thereby become rejected by the stock, and the same with lucerne when in full flower, as well as with some other plants of such kinds. There is occasionally loss too

in the heating of the food or grassy matters when heaped together in the carts or other places, if suffered to remain in such situations too long, and in some other ways of still less consequence ; yet whatever such waste may be, it is clear, from much experience, that soiling is beneficial in better supporting stock in the proportions already stated, and according to the nature of circumstances.

Excellence and Utility of the Practice in Producing Manure.

Another circumstance in which this management in keeping neat cattle stock has a great advantage over that of the pasture method, is that of the very large quantity of good manure which it is capable of raising and providing when well and properly executed, on which the increased culture of many sorts of crops, and the extended improvement of tillage as well as grass lands, materially depends. In the usual mode of pasture-feeding everything of this is dissipated, wasted, and lost, by many different causes, and is rather injurious than useful to the land where it is deposited. The method by soiling, on the contrary, is extremely and particularly well contrived for the production of this material in an abundant manner. The increase in the quantity of the urinary and other discharges of the animals, the extent of litter capable of being employed, and the materials which are scattered over the yards and other places, are readily and easily changed, and reduced into manure of a very useful kind; and by such means, with proper care and management, the most plentiful supplies of such manure may be procured, where in other methods there would

be none at all, which is a point of particular importance in favour of this sort of management. It is not improbable, but that by such means the summer produce in manure may be made to equal, if not exceed, that of the winter supply, and at the same time surpass it much in quality, as there is reason for supposing, that the manure supplied by any sort of neat or other cattle when fed in this way, if not in the state of fattening, is much better and more rich in its properties in the summer months than in those of the winter, as abounding more in ammonia, mucilaginous, and rich animalized vegetable matters. The quantities of such excellent manure, as with sufficient care, may be raised in this manner, in some cases, is hardly to be conceived, except by those who have been largely in the practice of it. With a view to the more effectual and ready decomposition and conversion of the littery matters into manure, it is of much consequence to have proper receiving places for the urine and other liquids, which should be frequently thrown over them in the cool of the day. In this way much benefit is often produced, and such liquids prevented from being evaporated and lost. In particular instances four large waggon-loads of dung perfectly rotten, or more, have been made from one cow in the season in such practice.

In order to gain and ensure the greatest possible benefit from this practice, it is, however, necessary to have a very nice and strict regard to several points and circumstances in the management; such as those of having perfectly suitable, proper, and convenient buildings and yards for the purpose, providing necessary and proper crops in due succession, and in suitable extent to the proportion of stock that is kept; the foddering, cleaning, and managing the animals in

a regular and proper manner, and the fully providing of different substances for use, as litter in the houses and yards; suitable directions for each of which are given below, under their proper heads.

Proper Buildings, Yards, and other Conveniences for this Purpose.

As much in what respects the economy of labour in foddering and supplying the cattle with different matters, and in the forming and preparing the manure in the best and most extensive manner in this practice, depends on the buildings and yards which are made use of in the business; it is necessary that they should be properly and suitably formed, and have all the conveniences and advantages possible in their plans and arrangements. Above all, it is essential to have well and suitably-formed open or close shed buildings, with properly sized divisions in them for tying up and containing the animals while eating their food; proper racks, cribs, and boxes, being fixed in them for the purpose. The yards should be immediately connected with them, and so designed as that a large portion of them may be laid over with littering matters, having proper floors for the purpose; and the other parts should gently shelve or incline to a watering pond or place. By such means and contrivances, every facility and advantage may be gained in conducting and carrying on such business.

Some persons, however, to save the expense of time and labour in clearing and removing the dirt and filth caused by this method, leave the cattle wholly loose in the yards, so as to eat their food from racks or cribs without any shed, the bottom of such yards being pre-

pared and laid with marl or any such matters as are proper for such use, a coat or layer of litter being spread out upon them so that the urine may be taken up and retained in such a way as to promote the forming it into manure; but it is, probably, a far better and more beneficial practice to have them fastened up in the divisions of such sheds as have been described above, especially in the nights and while eating their food; for notwithstanding there may be some saving of labour in the simple yard method, there are in the former the advantages of the manure being better, and that of the animals being kept in more quietness as well as being less interrupted and inconvenienced in consuming their fodder. In either of these modes the cattle should, however, be so separated and divided as that those of the same ages and sizes may be foddered and kept together in distinct divisions of such sheds or yards, in order that the smaller and weaker may not ever be injured or incommoded by the larger or more powerful, as is always the case when both sorts are kept and fed together loose in the same place.

In regard to the divisions, in the simple shed manner, and that of the shed and yard plan, some have found oxen and cows to do well in those of seven feet in width, each division containing two such animals fastened to the sides by their necks, being thereby prevented from injuring or incommoding each other in the time of eating their food. For smaller stock, six feet may answer very well, and perhaps less in some cases.

Culture of Crops Proper for, and Manner of Using them in this Practice.

It is a necessary part of this practice to raise and provide such green and other crops of the grass herbage, root and top, and other such sorts, that can be well and properly employed; especially those which have been already noticed, and a sufficiently full and ample quantity in proportion to the number of the animals, and to secure a proper succession of them, which is so requisite and material in this method of proceeding. For the most early use and application, there should be a due extent of lucerne crop on the deeper and more rich sorts of land, and of the winter and other tare on the stronger and better sorts of loamy land, in a proper state of preparation and condition for their full growth; the latter being sown so as to come in at different times in such early foddering of the cattle; and the former sown broadcast, or drilled in rows at six inches distance, in order to be more abundantly productive, and to bear the early cutting more perfectly: the first crop of winter tares should succeed the early cut lucerne, the later put in crops of the same tare kind succeeding that; after which the rye-grass and red clover on the mellow loams will be ready in most cases, to which another crop of the winter tare and the second cut of lucerne will succeed; when still later, these being finished, the spring tare crop may be in readiness, and be followed by the third cutting of lucerne, cow-grass, and white clover, with sain-foin on the chalky grounds, when the rich natural grass will be in a proper state for being cut if required. At different times in the more early parts of such foddering and keeping, the roots and

tops of the common Swedish turnips may be occasionally used in small quantities with much advantage; and in the later periods those of the carrot, parsnip, beet, and some other such kinds, will produce the utmost benefit from the practice.

There are other plants and crops, as those of the cabbage and cauliflower kind, that might be used in this way with much propriety, and perhaps advantage; but from the number which have been mentioned above, it is probable that they will seldom, and in but certain situations, be wanted; and with so many others of the cut natural grasses, will rarely, if ever, be much required, though they may be beneficially made use of in this manner wherever it is necessary to employ them.

Proper Modes of Foddering the Animals in this Practice.

Much in this practice depends on properly supplying the stock with their food and other matters. One important regulation is, never to suffer them to have too much food given them at one time of foddering, as whenever this is the case, the heat of the season inducing many grassy matters quickly to ferment and take on in some degree of putrid taint, they become wholly rejected, or only very slightly picked among, and a waste is caused that may be, by properly allowancing them, wholly avoided. Besides, it cannot be doubted but that by having such sorts of fodder given more frequently, and consequently in a more fresh state, the cattle will thrive in a better manner, and more expeditiously, as well as the least possible loss in food sustained.

As stock feeders in this way are commonly inclined to over feed, it is quite necessary to be attentive at all times to their conduct in this respect, as much of the advantage of the practice rests on it. In supplying the daily food great attention is also necessary. It should never on any account be suffered to remain for any length of time closely packed together in the carts or other conveyances, but be immediately spread out in its proper situations before the stock; and in order to save time and trouble, the best and most ready method would be to have the sizes of the carts or other contrivances for carrying it, adapted to the exact consumption of the stock, calculating for two or three fodderings, that the whole, or at least a certain part of it, may be at once readily and conveniently distributed to the cribs or racks of the houses or yards where the cattle are kept.

Where the supply of the day is collected at one time, the carts or other contrivances should be provided with a number of light open frame divisions, according to the number of fodderings, in order that too much grassy matter be prevented from being packed too closely together, and that the several different portions may be thus more conveniently distributed out to the stock. It is material too, that the crops to be used in the soiling practice should not be suffered to advance too far in their growth before they are used, as by proper attention to this point they may be consumed by the cattle with more regularity, and with the least possible waste.

It is further particularly necessary to the perfect success of this practice, that the cattle themselves be kept quite clean and free from every sort of filth and nastiness, as well as their cribs, racks, boxes, or mangers, and other places; that there be plenty

of good water for them to drink whenever they may be so disposed; that their food be given to them as above without the least possible delay or injury; and that they be either wholly turned out into the yards constantly after eating their fodderings, or have the open air for some hours every day in the summer months in the cool of the evenings, and in the mid-day when the season becomes more cold. Advantages would also be produced in the condition and growth of the beasts, as well as in the increase of some of the products afforded by them, by having the different sorts of such keep properly varied and employed in alternation with each other.

ON ANIMAL MATTER.

All bodies endowed with life, and with spontaneous motion, are called animals. These are all capable of reproducing their life; some, by the union of the two sexes, produce small living creatures; others lay eggs, which require a due temperature to produce young; some multiply without conjunction of sexes; and others are reproduced when cut in pieces, like the roots of plants.

All animals are fed on vegetables, either directly, or by the intervention of other animals. No one part of their substance is derived from any other source except water. The small quantity of salt used by man, and some other animals, is only necessary as a seasoning or stimulus to the stomach.

As the animal, then, is derived from the vegetable matter, we accordingly find that the former is capable

of being resolved into the same principle as those of the latter. Thus, by repeated distillations, we obtain from animal substances, water, oil, air, an easy destructible salt, and charcoal. These secondary principles, are, by farther processes, at length resoluble into the same proximate principles which we find in vegetables, viz., air, earth, and water, and the principle of inflammability.

But though the principles of vegetable and animal substances are fundamentally the same, yet these principles are combined in a very different manner. It is exceedingly rare that animal substances are capable of the vinous or acetous fermentation, and the putrefactive, into which they run remarkably fast, is also different in some particulars from the putrefaction of vegetables. The smell is much more offensive in the putrefaction of animal than of vegetable substances. The putrefaction of urine, is, indeed, accompanied with a peculiar fetor, by no means so intolerable as that of other animal matters; this is, probably, owing to the pungency of the volatile alkali, and also to the urine containing less inflammatory matter than the blood and other fluids. When analysed by a destructive heat, animals afford products very different from those of vegetables; the empyreumatic oil has a particular and much more fœtid odour, and the volatile salt instead of being an acid, found as it is in most vegetables, is found in animals to be a volatile alkali.

Chemists have spoken of an acid procurable from animal substances, and indeed, certain parts of animal bodies are found to yield a salt of this kind; but it by no means is the case with animal substances in general; and though the proofs to the contrary were even conclusive, it is confessedly in so small a quantity as not

to deserve any particular regard. In some animals, however, an acid exists, uncombined and ready formed in their bodies. This is particularly manifest in some insects, especially ants, from which an acid has been procured by boiling them in water.

The solid parts of animal bodies, as the muscles, teguments, tendons, cartilages, and even the bones, when boiled with water, give a gelatinous matter or glue, resembling the vegetable gums, but much more adhesive. We must, however, except the horny parts and the hair, which seem to be little soluble either in water or in the liquors of the stomach. The acids, the alkalies, and quick-lime, are also found to be powerful solvents of animal matter. It is from the solid parts that the greatest quantity of volatile alkali is obtained; it arises along with a very fœtid empyreumatic oil, from which it is in some measure separated by repeated rectifications. This salt is partly in a fluid, and partly in a solid state, and from its having been formerly prepared in the greatest quantity from the horns of the stag, it has been called salt, or spirits of hartshorn. Volatile alkali, however, is procurable from all animals, and from almost every part of an animal, except the fat. Though we are sometimes able to procure the fixed alkali from an animal cinder, yet it is probable that this salt did not make any part of the living animal, but rather proceeded from the introduction of saline matter, incapable of being assimilated by the functions of the living creature.

In speaking of the fluid parts of animals, we should first examine the general fluid from whence the rest are secreted. The blood, which at first sight, appears to be a homogenous fluid, is composed of several parts, easily separable from each other, and which the

microscope can even perceive in its uncoagulated state. On allowing it to stand at rest and to be exposed to the air, it separated into what are called the crassamentum and the serum. The crassamentum consists chiefly of the red globules, joined together by another substance, called the coagulable lymph; the chemical properties of these globules are not as yet understood, but they seem to contain the greatest quantity of iron found in the blood.

The serum is a yellowish subviscid liquor, having little sensible taste or smell; at a heat of 160 Farenheit's thermometer it is converted into a jelly. This coagulation of the serum is also owing to its containing a matter of the same nature with that of the crassamentum, viz., the coagulable lymph; whatever then coagulates animal blood, produces that effect on this concrescible part.

Several causes, and many different substances, are capable of effecting this coagulation, such as contact of air, heat, alcohol, mineral acids, and their combinations with earths, as alum, and some of the metallic salts. The more perfect neutral salts are found to prevent the coagulation, such as common salt and nitre.

Of the fluids secreted from the blood, there are a great variety in men and other animals.

The excrementitious and redundant fluids are those which afford, in general, the greatest quantity of volatile alkali, and empyreumatic oil. There are also some of the secreted fluids, which, on a chemical analysis, yield products in some degree peculiar to themselves. Of this kind is the urine, which is found to contain in the greatest abundance the noted salt formed from the phosporic acid and volatile alkali. The fat, too, has been said to differ from other animal matters in yielding, by distillation, a strong acid, but

no volatile alkali. There is also much variety in the quantity and state of the combination of the saline and other matters in different secreted fluids.

Animal oils and fats, like the gross oil of vegetables, are not of themselves soluble, either in water or vinous spirit, but they may be united with water by the intervention of gum or mucilage. Most of them may be changed into soap by fixed alkaline salts, and may thus be rendered miscible with spirit as well as water.

The oderous matter of some oderiferous animal substances, as musk, civet, castor, is, as well as essential oil, soluble in spirit of wine, and volatile in the heat of boiling water.

It is said that an actual essential oil has been obtained from castor in a very small quantity, but of an exceedingly strong diffusive smell. The blistering matter of cantharides, and those parts of sundry animal substances in which their peculiar taste resides, are dissolved by rectified spirit, and seem to have some analogy with any gummy resins.

The gelatinous principle of animals, like the gum of vegetables, dissolves in water, but not in spirit or in oils; like gums also, it renders oils and fats miscible with water into a milky colour. Some insects, particularly the ant, are found to contain an acid juice, which approaches nearly to the nature of vegetable acid. There are, however, sundry animal juices which differ greatly, even in these general kinds of properties, from the corresponding ones of vegetables. Thus, animal serum, which appears analagous to vegetable gummy juices, has this remarkable difference, that though it mingles uniformly with cold or warm water, yet, on considerably heating the mixture, the animal matters separate from the watery fluid, and concretes into a solid mass.

Some have been of opinion, that the heat of the animal body in certain diseases might rise to such a degree as to produce this dangerous or mortal concretion of the serous humours, but the heat requisite for this effect is greater than it appears capable of sustaining. The soft and fluids parts of animals are strongly disposed to run into putrefaction; they putrefy much sooner than vegetable matter, and when corrupted, prove more offensive.

This process takes place, in some degree, in the bodies of living animals, as often as the juices stagnate long, or are prevented by an obstruction of the natural emunctories from throwing off their more volatile and corruptible parts. During putrefaction, a quantity of air is generated, all the humours become gradually thinner, and the fibrous parts more lax and tender; hence, the tympany, which succeeds the induration of any of the viscera, or the imprudent suppression of dysentries by astringents, and the weakness and laxity of vessels observed in the scurvy, &c. The crassamentum of human blood, as well as that of quadrupeds, change by putrefaction into a dark livid colour, a few drops of which tinge the serum with a tawny hue, like the ichor of sores and dysenteric fluxes, as also the white of the eye, the saliva, the serum of blood drawn from a vein, and the liquid that oozes from a blister in the scurvy, and in the advanced state of malignant fevers.

The putrid crassamentum changes a large quantity of recent urine to a flame-coloured water, so common in fevers and in the scurvy. The mixture, after standing an hour or two, gathers a cloud resembling what is seen in the crude water of acute distempers, with some oily matter on the surface like the scum which floats on scorbutic urine. The serum of the

blood deposits in putrefaction a sediment resembling well digested pus, and changes to a faint olive-green. A serum so far putrefied as to become green, is perhaps never to be seen in the vessels of living animals; but in dead bodies this serum is to be distinguished by the green colour which the flesh acquires in corrupting. In salted meat this is commonly ascribed to the brine, but erroneously, for that has no power of giving this colour, but only of qualifying the taste, and in some degree the ill effects of corrupted aliments. In foul ulcers, and other sores where the serum is left to stagnate long, the matter is likewise found of this colour, and is then always acrimonious. The putrefaction of animal substances is prevented or retarded by most saline matters, even by the fixed and volatile alkaline salts, which have generally been supposed to produce a contrary effect. Of all the salts that have been tried, sea salt seems to resist putrefaction the least; in small quantities it even accelerates the process. The vegetable bitters, as camomile flowers, are much stronger antiseptics, not only for preserving the flesh long uncorrupted, but likewise somewhat correcting it when putrid: the mineral acids have this effect in a more remarkable degree.

Vinous spirits, aromatics, and warm substances, and the acrid plants, erroneously called alkalescent, scurvy-grass, and horse-radish, are found to resist putrefaction. Sugar and camphor are found to be powerfully antiseptic. Fixed air, or the carbonic acid, is likewise known to resist putrefaction; but, above all, the vapour of nitrous acid in the form of air is found to be the most effectual in preserving animal bodies from corruption. The list of the septics, or of those substances which promote putrefaction, is very short, and such a property has only been discovered in calca-

reous earths and magnesia, and a very few salts whose bases are of these earths. It is observable, that notwithstanding the strong tendency of animal matter to putrefaction, yet broths made from them, mixed with vegetables, instead of putrefying turn sour.

It has been found that when animal flesh in substance is beaten up with bread, or other farinaceous vegetables, and a proper quantity of water, into the consistence of a pap, this mixture likewise, kept in a heat equal to that of the human body, grows in a little time sour, while the vegetable matters without the flesh suffer no change. Some few vegetables, in the resolution of them by fire, discover some agreement in their matter with bodies of the animal kingdom, yielding a volatile alkaline salt in considerable quantity, with little or nothing of the acid or fixed alkali, which the generality of vegetables afford. In animal substances also, there are some exceptions to the general analysis; from animal fats, as we observed before, instead of a volatile alkali, an acid liquor is obtained, and their empyreumatic oil wants the peculiar offensiveness of other animal oils.

MILKING.

THE operation of milking, as well as many other operations in the dairy, require the most minute and unremitting attention. Hence, a small dairy is usually more profitably managed than a large one, for the farmer's wife and daughters can more readily superintend, or perhaps perform a great part of the dairy operations themselves, when the farm is of a moderate size,

and this is always better done by them than we can expect from a hired servant. Sir John Sinclair justly remarks, that no branch of husbandry requires such constant and unremitting attention. " If," says he, " a few spoonsful of milk are left in the udder of the cow at milking; if any of the implements used in the dairy be allowed to be tainted by neglect; if the dairy-house be kept dirty, or out of order; if the milk is either too hot or too cold at coagulation; if too much or too little rennet is put into the milk; if the whey is not speedily taken off; if too much or too little salt is applied; if the butter is too slowly or too hastily churned; or if other minute attentions are neglected, the milk will be in a great measure lost. If these nice operations," continues Sir John, " occurred only once a month, or once a week, they might be easily guarded against; but as they require to be observed during every stage of the process, and almost every hour of the day, the most vigilant attention must be kept up throughout the whole season. This is not to be expected from hired servants."

MAKING BUTTER.

Another important branch of the dairy system, is the making butter; an art which appears to have been the invention not of the Greeks or Romans, but of the ancient Germans and Britons. With regard to the good or bad qualities of butter, a great deal has been always ascribed to the pasturage of different farms or districts. Recent observations and experiments, however, show that much less depends upon this than has been com-

monly imagined. Still, however, we are disposed to believe that certain pastures are more favourable to the production of good butter than others. Certain plants, such as turnip, wild garlic, hemlock, rough-leaved dandelion, charlock and May-weed, are known to effect the milk with a disagreeable flavour; and there may be others which to a certain degree impair its goodness, though their effects are by no means so evident.

Far more, however, depends on good management, than on this circumstance, or even on the species of the cow we feed; for that something likewise, is owing to this, is equally well ascertained. Cows have been found whose milk could not be brought to yield any butter at all. It has long been remarked, that the butter in the highlands of Scotland, when properly made, possesses a peculiarly rich and delicate flavour; and this has been almost universally attributed to the old grass on which the cows feed in these remote glens. But what more common error than to mistake a concomitant circumstance for a cause. Dr. Anderson, by his experiments on milk, has shown that the excellence of the highland butter may be very reasonably ascribed to a quite different cause. He has proved that the cream of a given measure of milk constantly increases in quantity, and still more in quality, from the first drawn teacupful, to the last drop that can be squeezed from the udder at the time. From twelve to twenty hours in summer, and about twice as long in winter, should be permitted to elapse before the milk is skimmed after it has been put into the milk-pans. If on applying the tip of the finger to the surface nothing adheres to it, the cream should be properly taken off; and during the hot summer months this should be done always in the morning, before the dairy be-

comes warm The cream should then be deposited in a deep pan, placed in the coolest part of the dairy, or in a cool cellar, where free air is admitted. In hot weather, churning should never be less frequent than twice a week.

This work should be performed in the coolest time of the day, and in the coolest part of the house, where there is a free draught of air. Cold water should be applied to the churn, first by filling it with this some time before the cream is poured in, and then by immersing it in water to the depth of a foot or so during the operation, provided we use the pump-churn; or by applying wet cloths to it if we use a barrel-churn. Such means are generally necessary to prevent the too rapid acidification of the cream, and formation of the butter. The winter season, and cold weather, of course require an opposite practice, but we can hardly be too cautious in the application of heat; for the common practices of wrapping the churn in a warm cloth, plunging it into hot water, adding warm milk to the cream, or placing the churn near the fire, all tend to injure the butter. The best way, perhaps, is to heat the churn by filling it with boiling water before the cream is put in, and to place it in the warmest part of the house, but not close to the fire.

The operation of churning ought to be moderate, equable, and unremitting; for if we stop or relax in our exertions the butter will go bad, as it is called; and if the motion be too quick and violent, the butter will imbibe a very disagreeable flavour. This, in some districts of Scotland, is known by the phrase "bursting the churn." The processes for making butter have been various in different ages, and among different nations.

The operation of churning is well known; and we have only to observe, that though churns have been constructed of different forms, they may all be reduced to two, the vertical and horizontal. The vertical, or pump-churn, as it is usually named, was probably the first thought of, and is nothing more than a tall wooden vessel, three or four feet high, narrow in proportion to its height, and straighter above than below, having a sort of piston or staff adapted to it, with a perforated head, by moving which up and down with the hands the cream is agitated, and the butter is at length formed. The utensil is sufficiently well adapted to the operation of making butter on a small scale, where the cream to be churned is the produce of a few cows only; but where dairying is managed on the great scale, and the quantity of cream large, the operation performed in this way is too tedious and laborious for general use, and methods have been contrived to expedite the process and abridge the labour. This is best done by means of the horizontal, commonly called the barrel-churn, which is a cylindrical vessel, close at both ends, and firmly fixed upon a stand, having a sort of rack or trundle adapted to it within, usually with four blades, and turned by a winch, or handle, placed on its axle, passing through the ends of the churn. By this machine as much cream may be churned in an hour, as could be done in ten or twelve by the common upright churn.

WASHING BUTTER.

When the operation is properly conducted, the butter after some time suddenly forms, and is to be carefully

collected and separated from the buttermilk. But in doing this, it is not sufficient merely to pass off the milk, or withdraw the butter from it, because a certain portion of the caseous and serous parts of the milk still remain in the interstices of the butter, and must be detached from it by washing if we would obtain it pure. In washing butter, some think it sufficient to press the mass gently between the hands ; others press it strongly, and frequently repeating the washings till the water comes off quite clear. The first method is preferable when the butter is made daily for immediate use from new milk or cream, because the portions of such, adhering to it or mixed with it, contribute to produce the sweet agreeable flavour which distinguishes new cream. But when our object is to prepare butter for keeping, we cannot repeat the washings too often, since the presence of a small quantity of milk in it will, in less than twelve hours after churning, cause it sensibly to lose its good qualities.

The process of washing butter is usually nothing more than throwing it into an earthen vessel of clear cool water, working it to and fro with the hands, and changing the water till it comes off clear. A much preferable method, however, and that which we believe is now always practised by those who best understand the business, is to use two broad pieces of wood instead of the hands. This is to be preferred, not only on account of its apparently greater cleanliness, but also because it is of decided advantage to the quality of the butter, as the warmth of the hand always gives more or less of a greasy appearance ; and butter washed by means of the wooden flappers, as they are called, will always fetch at market a higher price than if the hand had been employed. The influence of the heat of the hand is greater than might

at first be imagined. It has always been remarked, that a person who has naturally a warm hand never makes good butter.

Preserving Butter.

After washing the butter, it should be cut and sliced in every possible direction, with a serrated or rough-edged knife, in order to bring out from it the smallest hair, bit of rag, strainer, or any thing that may have chanced to fall into it. It is then to be spread in a bowl, and such a quantity of salt added as may be judged proper.

If the butter is to be used immediately, or kept only for a short time, a small proportion will be sufficient; and in this state it is usually denominated *fresh* butter; but if it be intended to be long kept, or transported to a distance, an ounce or two of salt will be required to the pound of butter. The salt used in curing butter should be of the purest kind, well dried, and broken down, but not completely pulverised; and it must be so thoroughly worked in, as to be equally incorporated with the mass.

When butter is to be sold on the spot, or in the neighbouring markets, it is divided into rolls of a pound or half a pound; or into lumps of twenty-four ounces, called dishes in some parts of England; but when it is to be kept or carried to a distance, quantities of eighty-four, fifty-six, or twenty-eight pounds, are put up together in casks, usually called tubs, firkins, and half firkins. When the butter has been sufficiently impregnated with the salt by lying spread out in thin layers sprinkled with it, and thoroughly wrought, it is to be then gently pressed into the tub or

firkin, but which must not, however, be filled quite up, but room left at top to receive a layer of salt half an inch or an inch in thickness. In seven or eight days, the salted butter detaches itself from the sides of the firkin, shrinks, and occasions interstices. These, if allowed to remain, would injure the butter, by admitting the contact of the air. They are, therefore, to be filled up by a saturated solution of salt in water, or brine strong enough to carry an egg. The butter is then to be covered by a new layer of salt, and the head of the vessel put on.

Before the butter is put into the firkin, care must be taken that the latter be well seasoned, and this is to be effected by exposing it for two or three weeks to the air, and frequent washing. The readiest method is, however, by the use of unslacked lime, or a large quantity of salt and water well boiled, with which it should be scrubbed several times, and afterwards thrown into cold water, to remain three or four days till wanted. It should then be scrubbed as before, and well rinsed with cold water; and before receiving the butter, every part of the inside of the firkin must be carefully rubbed with salt. Indeed, the surest of all methods to preserve butter from spoiling, after it has been properly salted, is to keep it constantly immersed in a saturated solution of this substance.

HOW TO TURN BARREN LAND INTO GOOD PASTURE AND MEADOW.

In one portion of the work I have already spoken of the best mode of grazing cattle, &c.; it may be here

worthy our attention to look into the best method of enriching the earth for meadow and pasture. This is done in two ways, viz., by watering and manuring it, and for this use, the lower the ground lies, so it be not subject to overflowings or too much wet, the better it is, and the sooner made good. Consider in the next place, what kind of grass it naturally produces, whether clear and entire, or mixed with that of worse growth; the first is the best; but if it be of the worse sort, intermixed with thistles, broom, and offensive weeds, then grub and pluck them up by the roots, clearing the ground of them as well as you can; then dry them, mix them with straw and burn them with the swarth of the ground, and spread the ashes upon it; then fold your sheep upon the ground for several nights, that their dung may increase its strength, and their feet trample up the grass; then scatter it over with good hay-seeds, and go over them with a good roller, or beat them with a flat shovel, that they may be the better pressed into the ground to take root; then over these scatter hay or the rotting of hay under stacks, or the sweepings of the barn, or moist bottoms of any hay that has been good and is moist and of no other use; then spread on your manure, or horse-dung, man's ordure, or the dung of any beast, which, being thinned, and the clods well broken, let it lie till the new grass springs through it; but do not graze it the first year, lest the cattle tread it up, not having yet taken very good root; but mow it, that it may have time to come to perfection. And though the first year it may prove short and coarse, yet the second it will be fine and very long, and in great plenty; and dressing it thus but once in fifteen or twenty years, will continue it for good meadow and pasture, especially if in dry seasons you have water to

relieve it, which may be done by bringing springs through it, or gather the violent falling of rain into a ditch on the other side of it, or by any other convenience, according to the situation of the ground on the ascending part, to overflow it so long that it sink deeper than the roots of the grass to continue its moisture for the nourishment of it for a considerable time.

And note here, that the best season for watering of meadows is from the beginning of November to the end of April; and the more muddy or troubled the water is, the better, for then it brings a soil upon the ground, and this generally happens after hasty showers and great floods of rain. And if you have many fields lying together, especially in a descent, you may make a convenience in the uppermost to stop up the water till it is very well soaked; and then by a sluice, or breaking down of a dam, let it into the next, and so by a small addition of water, transmit it to many.

THE PROGRESS OR INCREASE IN WEIGHT AND PROFIT IN PASTURE-FEEDING OR FATTENING NEAT-CATTLE STOCK

This is evidently a matter which must depend upon a variety of different circumstances, such as the nature and state of the feeding pastures or keep; the breed or particular kind of the animals; their different dispositions to feed or take on flesh and become fat; and the habits they possess of being tame and quiet, or the contrary, as well as some other causes. From various statements, it appears that large stock of the ox kind,

increase about three pounds in the day each beast, while in those of the smaller sorts, the increase is not more than about one and a half. It is of course very clear that such large sized stock is the most proper and beneficial for those rich feeding pastures on which they can be fattened, and also for being made fat on the more expensive kinds of dry food, as taking the price at only eightpence the pound, the former will pay two shillings a day for their keep, when the latter will only afford half of that amount; while the difference in the consumption is often very immaterial, and in few cases more than a fourth part less in the small than the large animals of this sort, which are equally good of their kinds, as many correct trials have fully demonstrated. Large oxen are in many cases known to increase on good feeding grounds in the summer months from four or five to nearly six hundred pounds each in the course of from twenty to twenty-five weeks; but as the last is an uncommon and extraordinary profit, it may be more properly stated that a beast of this sort, of a good kind, in the lean state, the live weight of which is about eighty-five stone, of fourteen pounds, taking the dead or carcase weight at one half, which is more than it is in such cases, and allowing the above price of eightpence the pound for the whole full or living weight, or which is the same thing, fourpence the pound for the dead or carcase weight, the animal will be worth about twenty pounds to buy in; and to afford a fair average profit, it should increase in weight three hundred pounds, and be sold for about thirty pounds. The expense of fattening which, the first cost of the beast, the rent of the land on which it is fed, taking it at an acre and a half, (and it cannot probably be less), for taxes, and the interest of capital, will be about twenty-five pounds four shillings

and fourpence, leaving a profit, with the under stock, of about five pounds fifteen shillings and sevenpence, supposing the beast to increase in the above manner, and to be sold at the prices stated. The usual profit is, however, somewhat less, as a fifth or more. But in the smaller sorts of neat-cattle stock, even admitting their increase in weight to be in the same proportion, they will not afford the same amount of profit; they have, however, other advantages; they take up less time in completing their fatness, and are capable of being made fat on poorer sorts of land; and, by their becoming fat more easily in the summer, they gain better prices in the markets. Their use and advantage, whatever they may be, and their increase in weight, will, however, most probably be the best shown by stating that an ox of this size, weighing about sixty stone, of fourteen pounds, bought in at fourpence the pound for the whole or living weight, or double that price for the dead or carcase weight, which will be about fourteen pounds; the increase in weight in four months keep, being about one hundred and eighty pounds, or about eleven pounds in the week, the animal will be worth twenty pounds, or thereabouts, and pay from seven to eight shillings the week for its keep. The charge of fattening, in this case, in the first cost of the beast, the rent of the land necessary for the purpose, allowing the same extent as before, the taxes, and the interest of capital, is about seventeen pounds ten shillings and threepence, leaving a profit with the under stock of about three pounds nine or ten shillings each beast

In some districts, in times when the prices are moderate, and the sorts favourable in their dispositions for fattening, lean oxen are bought in at two shillings, or two and threepence the stone, the weight which they will reach when they are fat, or from threepence to

three-pence halfpenny the pound, it makes the profit of fattening on the lean weight of the beasts to be nearly three halfpence the pound, or about eighteen-pence the stone of fourteen pounds, which is about equal to ninepence the stone living weight.

In these statements, the great advantages of large sized stock, and rich full feeding or grazing grounds, are strongly shown and enforced, as well as the disadvantages and loss of small-sized animals, and the inferior sorts of feeding lands, pointed out; as it can scarcely be doubted, from the facts that have been brought forward, that in many cases such large beasts, where they possess ready dispositions for fattening, will increase as much in weight as the whole of that of a small beast in the course of but a few months; but this is a profit or advantage that can only arise or take place on feeding lands of the best or very good qualities; as in raising such large stock in flesh and fat to such great weights, there requires much better and more abundant keep. They are also necessarily kept in many instances and situations for a great length of time before they become ready for being fattened, and consequently do not suit cases where lands are poor or capitals small.

In the small-sized stock of this kind, the case is materially different in most circumstances; they can be raised to their proper weights on inferior keep, and the poorer sorts of feeding land, with less expense of food; they are ready for taking on flesh and fat in half the time of the others; but the increase in weight is less, and the produce or profit smaller; yet, under good management, two such beasts may be fattened in nearly the same length of time as one of the others, and with less danger of accidents; still, however, the whole of the amount of the produce or profit will only

in certain cases and circumstances come up to or surpass that of the large beast in such extraordinary instances, which can seldom or ever occur when the latter is got ready for fattening at the earliest possible period.

A TREATISE ON SHEEP.

REGARDED with respect to its wants, its disposition, and utility, the sheep is, in a peculiar manner, the creature of man. Without his fostering care and protection its race would soon be exterminated; but his kindnesses are repaid by an ample contribution to his necessities and comforts. It is to the sheep that we are indebted for a considerable portion of our aliment and for the most essential part of our clothing.

This animal is singularly inoffensive, and discovers less animation and sagacity than many other quadrupeds; but the Compte de Buffon has been guilty of injustice in describing it as destitute of the necessary art of self-preservation, without courage, and even deprived of every instinctive faculty. On extensive mountains, where numerous flocks range at liberty, and, generally speaking, independent of the shepherd's aid, they exhibit a very different character, and a ram or wether has been frequently seen to attack a dog, and come off victorious; when the danger is more pressing, they have recourse to the collective strength

of the whole, drawing up into a compact body, and presenting to every quarter an armed front, which cannot be attacked without the most serious danger to the assailant. It has also been observed, that few quadrupeds evince greater sagacity than the sheep in the selection of its food; and its acuteness of perception in regard to the approach of a storm is no less remarkable.

The varieties of this useful animal are so various, that no two countries produce sheep of the same kind, an obvious difference subsisting in every breed, either in the size, the shape, the fleece, or the horns

No country produces finer sheep than Great Britain. The improved Leicestershire breed is held in the greatest esteem in most parts of the kingdom, and almost all the principal breeders endeavour to introduce some mixture of it into their stock. The Lincolnshire breed are of a large size, and their fleeces, in point of weight and utility, greatly exceed those of Spain, owing to the rich luxuriant marshes on which they feed; but their flesh is coarse, lean, and not so finely flavoured as that of smaller sheep. The Dorsetshire sheep are, for the most part, white-faced, with long, slender legs, and scanty fleeces; their flesh is sweet and well-flavoured, and some varieties of the breed are diffused through most of the southern countries. The largest breed of English sheep, however, are to be found on the banks of the Icis, which runs through a fertile tract of country, dividing the counties of Durham and Yorkshire. The Shetland sheep are generally destitute of horns, and peculiarly distinguished by the shortness of their tails.

In the mountainous parts of Wales, where the sheep enjoy so great a share of liberty as to render them very wild, they do not always collect into large flocks, but

frequently graze in parties of eight, or ten, or twelve, of which one is stationed at a distance from the rest to give notice of the approach of danger. On observing any one approach, at the distance of two or three hundred yards, the sentinel turns his face to the enemy, keeping a vigilant eye upon his motions, and allowing him to advance as near as eighty or a hundred yards; but if the suspected foe attempts to come nearer, the watchful guard alarms his comrades by a loud hiss or whistle, which is repeated two or three times. Upon this signal the whole party scour away with inconceivable rapidity, and soon gain the most inaccessible parts of the mountains.

THE MANY-HORNED SHEEP.

These animals are natives of Iceland, and differ from the English breed in many particulars; having straight upright ears, a small tail, and sometimes four, five, or even eight horns. Their wool is long, smooth, and hairy; and under the outward coat, which falls off at certain periods, they have another covering resembling a short and soft fur. They are of a dark brown colour, and the quantity of wool produced by each sheep is about four pounds. They acquire considerable fatness by feeding on the scurvy-grass, of which they are extremely fond. In stormy weather they hide themselves in caves from the fury of the elements; but when such retreats are not to be found, they collect together during the heavy falls of snow, and place their heads near each other, with their muzzles inclined towards the ground. This not only prevents their being

so easily buried under the snow, but also renders them much easier to be discovered by the owner. In this situation they sometimes remain so many days that they are compelled by hunger to gnaw each other's wool, which forming into hard balls in their stomachs, often destroys them.

A good sheep of the Icelandic breed will yield from two to six quarts of milk a day; and of this the inhabitants make butter and cheese. But the most valuable part of these animals is the wool, which, like the argali, is stripped off at once at the end of May. The whole body is by this time covered again with new wool, which is short and extremely fine. It continues to grow during the summer, and becomes towards autumn of a coarser texture, very shaggy and somewhat resembling camel's hair. This covering enables the sheep to support the rigours of winter; but if after losing their fleece the spring prove wet, a piece of coarse cloth is usually sewed round the stomachs of the weakest to defend them from any ill effects.

OF THE DISEASES OF SHEEP.

The great inconvenience which attends sheep, is their being subject to the rot; which it is a hard thing to prevent if the year proves very wet, especially in May and June, except it be salt marshes, or in broomy lands, broom being one of the best preservatives against that distemper of any thing. I have known sheep cured of the rot when they have not been far gone with it only by being put in the broom-lands. Scurvy-grass, parsly, mustard, thyme, and all other sorts

of pot-herbs, are good for the prevention of it. Some propose to give sheep once a month, or oftener, half a handful of bay salt, which may be some service to them; but as the rot, red-water, and most of the distempers that sheep are subject to, proceed from too much moisture of the land they feed on, and the season of the year, so I should think that dry food at such times, and keeping them on dry land in wet seasons, and to give them fine hay, oats, &c. (amongst which some salt might be mixed), might be the best and most proper food for them to prevent these distempers. Sheep are often blind by means of their foulness of blood; to prevent which it is good to cut their tails and so to empty them of their blood.

FOOT ROT.

M. Pictet, a French writer, has given a very detailed account of this disease, as also the memoir of a Piedmontese professional man on the same subject. An English writer says, that this troublesome disease in the feet of sheep, is generally caused by keeping them in the wet marshy ground, or by travelling when the horny part of the hoof has been too much softened by standing in soft ground. It is supposed to be contagious. When a sheep is observed to be lame, and upon examination the foot is found to be affected with this disease, give vent to any matter that may be confined by paring away the horn; or if the horn is found to cover a diseased part, it should be removed with a knife, that the proper remedies may be applied to it. Caustics are found to be the only effectual remedies

for the foot rot. We have given three recipes or formulæ; the first, or milder preparation, will answer the purpose in slight incipient cases; but in those of long standing, the stronger caustic will be found necessary.

1. (MILD.)

Sulphate of Copper - -	2 ounces.
Water - - - - -	12 ounces.
Sulphuric Acid - - -	2 drachms.

2. (STRONGER.)

Powdered Verdigris - -	1 ounce.
Nitrous Acid - - -	2 ounces.
Water - - -	4 ounces.

3. (STRONGEST.)

Red Nitrated Quicksilver -	1 ounce
Nitrous Acid - - - -	2 ounces.
Spirits of Wine - - -	3 ounces.

Dissolve the nitrated quicksilver in the acid, and when perfectly dissolved add gradually the spirits of wine.

It may be necessary to dilute this sometimes with a little water; and it should be remarked, that after applying either of these preparations once or twice, the sore part will generally have a more healthy appearance, and then some mild application will be most proper, such as Friar's balsam, or tincture of myrrh. It is likely that a mixture of tar and turpentine would prove a useful application in such cases, as it may tend in some measure to protect the diseased part from moisture. For some time after the feet have been dressed, the sheep should be kept in a dry place; turning them in a limed fallow has been strongly recommended.

The following judicious treatment of this disorder is recommended by Sir George Mackenzie:—

"Let the animal in the first place get a dose of Glauber's salt. The ulcer having been laid open and cleaned, it is to be washed with weak caustic ley of potash or soda, and filled with scraped linen dipped in oil, or, what is better, Goulard cerate. The dressing of cerate is to be continued every evening, until granulations of flesh appear to be filling up the space formerly occupied by the matter of the ulcer; and if it should be necessary, the washing with caustic ley may be repeated. Common cerate may then be applied; and should the flesh grow too luxuriantly, a little red precipitate and burnt alum may be dusted upon it. When a wholesome suppurative discharge has taken place, gentle pressure may be applied to bring the sides of the sore towards each other, taking care always to give free vent to the matter. The limb should be carefully washed with vinegar and water."

THE ROT.

Symptoms.—Dr. Coventry says, that *Rot* is a word which has been employed to express a variety of disorders affecting the sheep with no small confusion and detriment. Yet all the species of rot may be reduced to one; but when the disease has advanced, it becomes very complicated, and has been deemed incurable.

The complication of disorders which are always observed in the advanced stages of the rot, might be expected where bad food is supposed to be the cause of it; for this must vitiate the blood, and different organs may then become diseased. Accordingly we find the liver, the lungs, and the whole system affected, and

water is frequently found in the belly. It is very probable that consumption of the lungs is a common disease among sheep; and that it has in many instances been mistaken for rot. Mr. Stevenson, indeed, has considered the lungs to be its chief seat. Cold is the most frequent cause of consumption, although inflammation may be excited by other means.

Sheep are sometimes born with little tumours, called tubercles, on their lungs; and these appear to be the original seat of the disease in them as in the human subject. These tubercles being inflamed by cold, or other means, swell, and become filled with matter. Sometimes they are coughed up in this state; but most frequently they degenerate into ulcers, which spread and consume the substance of the lungs. When the lungs are affected in any case of rot, it is a hopeless business to attempt a cure, especially if they are suspected to be ulcerated. But as it may often happen that such tubercles as have filled with matter may be coughed up, mere difficulty of breathing need not deter us from attempting a cure. But the liver must be considered as the principal seat of the disease; and as it is the organ which prepares the bile, which assists digestion, we ought by all means to endeavour to restore it to a sound state. With respect to the flukeworms formed in the livers of rotten sheep, their production cannot be fully explained; but it is sufficient that we know they do exist in diseased livers to be convinced of the propriety of destroying them if possible.

Causes.—This disease never attacks sheep on dry lands, and it has been observed to affect sheep which were before healthy almost immediately on their being sent to feed on soft wet pastures. Mr. James Hogg thinks that it proceeds from a sudden fall in condition;

others have assigned bad and unwholesome food as the cause of the rot. A sudden fall in condition may accompany the disease without having induced it. A sheep may continue to fill its belly, and yet fall off. It is the cause of the transition from fatness to leanness, and not the transition itself that ought to be looked to. If that cause be hunger, rot will not be the consequence, but the usual effects of starvation will follow. It is well known that on healthy pastures, whether so rich as to keep sheep fat, or so poor as only to bring them into ordinary condition, the rot is not known. Soft rank grasses, whether abundant or scarce, invariably occasion the disease. Indeed it is now so well understood that rank grasses act as a sort of poison on the stomachs of sheep, that the rot is very easily avoided.

Cure.—The cure, in the first stage of the disease, does not present many difficulties. The first object is to free the stomach and intestines from their pernicious contents by means of a purgative, such as common or Glauber's salt; and when that is accomplished, wholesome food will most probably complete the cure.

The medicine to which we may look with greatest confidence in the advanced stages of rot, appears to be mercury. It would, perhaps, be improper to administer this internally. The safest, and most effective method of applying it, is in the form of the common blue ointment, and a trial of this is strongly recommended to those whose flocks are liable to rot. It should be applied to the bare skin, on the region of the liver, and the size of a nut rubbed on it till it is all dried up twice a day for a week or ten days. This, in conjunction with wholesome food, will in all probability prove to be the most effectual treatment. Mercury is well known to be a specific for the diseased liver of the

human body, and on that account we may presume that it will be efficacious in the cure of the same organ in sheep; and it is also recommended as the most effectual means of destroying the fluke-worm.

RED WATER.

Symptoms.—Red Water commonly makes its appearance about the beginning or end of winter, and first affects about the breast and belly. It consists of an inflammation of the skin, that raises it into blisters, which contain a thin, reddish, and watery fluid. These continue for a short time, break, discharge this matter, and are followed by a blackish scab.

Red Water is a disease that but seldom appears in this country, and it is almost never fatal.

Causes.—When the sheep are exposed to cold or wetness, the skin being fretted makes the blisters rise; or they often arise from cold affecting the animal, thus producing a slight fever, which throws out these vesicles on the body, similar to the scabby eruptions which appear about the face, and more particularly the mouth, of those persons affected with cold. The blood in this disease is but little affected, although a little of it oozes into the vesicles on the skin, and communicates to them that reddish tinge which gives origin to the name.

Cure.—In cases where the disease is violent, a little blood should be taken. The sheep should be placed in a fold by itself, the blisters slit up, and a little in-

fusion of tobacco put into them; and the following medicine may be given for three or four mornings successively:—

Flour of Sulphur - - - 2 ounces.
Honey, Treacle, or Syrup - 3 ounces.

Mix them, and divide them into six doses, of which one may be given every morning in half a pint of warm water. If this is found successful, half an ounce of nitre mixed with the foregoing recipe, will be attended with good effect; after which a dose of salts may be given, and the body washed with lime water.

Another kind of Red Water has been described, said to be caused by feeding on turnips and succulent grasses. It attacks sheep that are in good condition, and often destroys them in twenty-four hours. This, however, is a different disease, and consists in an inflammatory state of the system, affecting particularly the internal parts. Here bleeding is essentially necessary; after which the bowels should be emptied, by giving from one ounce to one ounce and a half of Epsom salts. When the animal recovers, he should not be too hastily turned into the pasture with the other sheep.

ERYSIPELAS, OR WILD-FIRE.

Symptoms.—This, like the last mentioned disease, also affects the skin, and is apt, if not attended to, to spread very quickly among the flock. It is attended with more inflammation than the last, and but seldom with blisters over the body. It commonly appears in

August and September, and does not continue above eight days at a time, although those sheep affected with it are liable to relapse. In former times it was a practice with shepherds to bury those sheep affected with this disease at the door of the fold, with their feet upwards, which they believed acted as a charm to drive it from the flock.

Cure.—" It is necessary," says Mr. Stephenson, " for the cure of this disease, to follow the same method recommended in the Red Water. An ounce of salts dissolved in warm water, given every morning for three or four days, answers remarkably well to begin the cure, when the last mentioned recipe, with the addition of the nitre, may be continued till the disease disappears. But Sir G. Mackenzie thinks, that giving salts in warm water is liable to objection. The effect of the medicine, he says, ' will be more powerful, and more beneficial, when the solution is administered cold. For washing the body, Goulard water is the best application.' "

SCAB, OR ITCH.

Symptoms.—This infectious, troublesome, destructive disease, is well known. A sheep is never even slightly affected but it proceeds to scratch itself, and rub its sides and buttocks against every thing it meets.

As soon as the disease is discovered, the whole flock among which the scabbed animal has been pasturing, should be carefully examined, and every one

which has an appearance of being fretted on the skin, should be taken away to be cured.

Causes.—This is a very infectious disease. It seldom appears among sheep which have been smeared, and when it does, it probably proceeds from the touch of a diseased animal, of a stone, or a tree, or paling, on which scabbed sheep have rubbed themselves.

Cure.—Several ointments have been proposed for the cure of this disease, and that of Sir Joseph Banks seems to have been most approved of. His prescriptions, however, can only be made by an apothecary, a personage not always at hand, and who may not always have sheep ointment ready when wanted. Every apothecary has abundance of mercurial ointment at all times, and if a shepherd purchases a quantity of it to keep by him, and with a little oil of turpentine, he may always have it in his power to make up ointment when required, and of such a degree of strength as he may judge proper.

The following directions may be found useful:—take

Strong Mercurial Ointment -	4 pounds.
Oil of Turpentine - - -	half a pint.
Hog's Lard, Tallow, or Butter -	4 pounds.

Melt the hog's lard, or butter, allow them to settle, and pour off the clear liquid; then add the mercurial ointment; stirring the whole well till it be melted and incorporated, and then add the oil of turpentine. Keep stirring the mixture for a minute or two, that the mercury may be completely mixed, and then pour the whole into some shallow vessels, that the ointment may cool quickly. If the mercury should appear to have sunk when the ointment is cold, it may be

rubbed a little with a smooth flat stick on a plate; but there will seldom be any occasion for this if the process be well managed. A very effectual and a much cheaper ointment may be made as follows:—

Corrosive Sublimate - -	8 ounces.
Train Oil - - - -	6 gallons.
Rosin, (black or yellow) - -	2 pounds.
Tallow - - - - -	2 pounds.

Let the corrosive sublimate be reduced to a fine powder, and mixed with a portion of the oil. The rosin, tallow, and remainder of the oil, are to be melted together over the fire, and the sublimate afterwards added.

If the mixture should be thought too thin, the proportion of oil may be diminished, and that of the tallow increased. Were one or two pounds of powdered white hellebore to be added, it would improve both the consistence and efficacy of the ointment. One pound of sublimate at ten shillings, will, in this way, go as far as fifty pounds of mercurial ointment at three shillings. If the wool be not taken off, either of these ointments, or that of Sir Joseph Banks, is to be laid on in the same manner as smearing stuff, beginning with a line along the back; one is to be laid on each side, and one down each leg. The neck, inside of the thighs, and belly, should have a share. In every case, however, the wool should be shorn, except during very cold weather, and the animal washed and brushed with soap and water, before the application of the ointment, which may now be applied all over the body. The mercury will have more effect, and less of the ointment will serve, when all the filth and loose scabs have been removed by the washing. Anointing the sheep, after being shorn, will be found a very effectual means of warding off the scab and every disease of the skin.

As there is some danger in using powerful mercurial ointments, unless very cautiously applied, the following method may be tried, and will be found successful in all recent cases :—

In the first place, let the sheep be well washed with soft soap and water, and by means of a brush let the scurf or scabs be rubbed off from the affected parts of the skin. When the sheep is perfectly dry, the following ointment is to be applied, taking care that it is well rubbed upon the diseased parts :—

Hog's Lard - - - -	1 pound.
Oil of Turpentine - - -	4 ounces.
Flour of Sulphur - - -	6 ounces.

Melt the lard over a slow fire, and when fluid, but not very hot, add the turpentine and sulphur, and continue stirring the mixture until it is cold.

The success of this remedy depends in a great measure upon the above directions being strictly attended to.

SWINE.

THE WILD BOAR.

This animal, which is the original of all the varieties to be found in the hog species, is much smaller than the domestic kind; and does not, like them, vary in colour, but is uniformly of a brindled grey, inclining to black. His snout is considerably longer than that of the tame hog, and his ears are short, round, and black. Each jaw is also armed with formidable tusks, with which he ploughs up the earth like a furrow, in search of roots, &c.; with these also he inflicts terrible wounds on his enemies.

The wild boar cannot properly be called either a solitary or a gregarious animal. The three first years the whole litter follow the sow, and the family live in a herd together, and unite their common forces against the invasions of the wolf, or the more formidable beasts of prey. But when the wild boar is arrived at a state of maturity, he walks the forest alone and fearless. At that time he dreads no single creature, nor does he

turn out of his way even for man himself. He does not seek danger, and he does not seem to avoid it.

The chase of the animals is dangerous; but a common amusement with the great in those countries where it is to be found. The dogs used for this sport are of the slow heavy kind; as those trained for hunting the stag or roebuck would too soon come up with their prey, and instead of a chase, would only furnish an engagement.

When the boar is roused, he goes slowly forward, not much afraid, and at no great distance from his pursuers. He frequently turns round, stops till the hounds come up, and attempts to attack them; but as these are perfectly aware of their danger, they keep off, and bay him at a distance. After gazing at each other with equal animosity, the boar again goes forward, till at length he becomes perfectly fatigued, and refuses to proceed any further. The dogs then attempt to close in upon from behind, and though many of the younger ones lose their lives in consequence of their temerity, the others keep him at bay till the huntsmen come up and dispatch him with their spears.

These animals are found in almost all the temperate parts of Europe and Asia, as well as in some of the upper parts of Africa.

In former times, the wild boar was a native of Britain, as appears from the laws of Norval Ddar, the famous Welsh legislator, who permitted his grand huntsman to chase that animal from the middle of November to the beginning of December.

William the Conqueror also punished such as were convicted of killing the wild boar in his forests with the loss of their eyes.

THE SOW.

The common or domestic hog is, generally speaking, a very harmless animal. He lives for the chief part on vegetables, yet can devour the most putrescent carcases. He is, however, generally supposed much more indelicate than he is really. He selects, at least the plants of his choice, with equal sagacity and niceness, and is never poisoned like some other animals by mistaking noxious for wholesome food. No animal has a greater sympathy for those of his own kind. The moment one of them gives a signal, all within hearing rush to his assistance. They have been known to gather round a dog that teased them and kill him on the spot; and if a male and female be inclosed in a stye when young, and be afterwards separated, the female will decline from the instant her companion is removed, and will probably die of a broken heart.

In the island of Minorca, hogs are converted into beasts of draught; a cow, a sow, and two young horses, have been there seen yoked together, and of the four the sow drew the best.

A gamekeeper of Sir H. Mildmay actually broke a black sow to find game, and to back and stand. *Slut*, which was the name he gave her, was rendered as staunch as any pointer. After Sir Henry's death this *pig pointer* was sold by auction for a very considerable sum of money.

The hog is one of those animals that are doomed to clear the earth of filth and refuse, and that convert the most nauseous offals into the richest nutriment. The thickness of his hide and fat renders the hog almost insensible of ill treatment, and instances have occurred of mice eating their way into the fat on the back of

one of these animals without incommoding the creature. Although naturally inoffensive, he possesses powers which, when called into action, render him a very formidable enemy. He is, however, stupid, inactive, and drowsy; and nothing but the calls of appetite interrupt his repose, to which he always returns as soon as these are satisfied.

The female goes four months with young, and has numerous litters, from eight to fifteen at a time, and sometimes even twenty. These animals live to the age of twenty-five or thirty years.

Swine, as well as other animals, are subject to various diseases, although not so frequently; nor are their maladies attended with such fatal consequences. Swine are frequently troubled with lice or ticks, hence their desire to wallow and roll in miry places and bogs; as soon as the dirt is dry it will easily rub off, and thus they are freed of the vermin; at the same time lying down in such places cools their bodies, for no animals have such a hot constitution as swine. Dirt, however, is by no means good or wholesome for them, nor do they fatten so freely when pent up closely in a stye, and allowed to wallow constantly in their own dung: hence the chief cause of disease.

One instance of the heat of their bodies is, that they have been known to fatten much quicker and better in cool, moist, and shady woods, and where much food was not visible than in hot inclosures; although a quantity of food has been given them with the trouble of seeking it. Consequently no food of a heating nature should be given them in any abundance, and at all times they should have free access to water.

The general symptoms of illness with swine, is a dull, heavy look, their ears hang listlessly down, and all appetite leaves them, nor does it return till they

are perfectly well again; unhealthiness in these animals may be discovered by drawing the hand over the bristles in an opposite direction to their growth; if the roots be white and clean the pig is sound, but if the skin is speckled with a reddish cast, he is unhealthy.

THE MEASLES

Is discovered by looking under the tongue, where a quantity of small black blisters are found; considerable weakness in the hind-legs exist, and the flesh is spotted with red.

Give the following dose:—

Crude Antimony, (powdered) - 1 ounce,

mixed in a little water or wash, then keep him in the stye from three to four hours. If this does not effect a cure repeat the dose.

Brimstone in the pig's wash is esteemed very excellent.

SORES AND CRACKED EARS.

The udder of a sow is subject at times to glandular swellings. Camphorated saturnine washes or ointments may be used in such cases. Half a drachm of calomel may be administered occasionally till the swelling has subsided. Cracked ears, and other sores of the same description, may be rubbed with saturnine

ointment. Cracked ears, however, only occur in very hot weather. Swellings on the throat from eating acorns must be lanced and anointed with lard.

OF SOWS AND BOARS FOR BREEDING.

Sows that have been kept at the teat for a considerable time, and also occasionally well fed, will be fit for the boar at eight or nine months old; and if they are kept clean, and in tolerable condition, they will produce three litters of pigs in a year. The usual time, however, of putting a sow to the boar, is in the twelfth month, and then she has acquired that strength and vigour which is necessary in every animal for the procreation of a healthy stock.

The boar, although he is capable of serving a sow at six months old, should not be allowed to couple till he has attained his ordinary growth, which will not be earlier than a year.

Sows which have been put to the boar very early, do not continue to breed long; whereas, on the other hand, they have had litters for seven years, when the number at each time of farrowing has not been very great. The smaller breed of sows generally produce the earliest litters, as well as the most numerous.

Most farmers are of opinion that the best bearing time is from November till the close of March or the beginning of April.

It is not always proper to put the sow to the boar at every breaming; for three litters every year would take away too much nourishment, and each succeeding litter would be weaker, and probably more unhealthy

than the first. Many farmers, however, kill their sows after a few litters, which should not be the case if she continue to rear them with safety. Every sow should be placed in a separate stye as pregnancy advances; by these means the belly is less liable to be hurt, and at the time of falling they are not so likely to be devoured. Eight weeks is the usual time of weaning.

ON REARING AND FATTENING PIGS.

YOUNG pigs should be fed much better than store pigs. Vegetables are very good for them, and wash should be administered at the least twice a day; this last is best made with meal and the liquor or water in which meat, vegetables, &c., have been boiled; where there is an extensive dairy great benefit will be derived from mixing milk with their food. Oats have been strongly recommended. Pea-soup is a very excellent consistency for young hogs; this is made by boiling six pecks of peas in about fifty or sixty gallons of water, until the peas have become a thick fluid. After harvest, pigs may be very advantageously turned into the fields; and if a wood is at hand, in the fall of the year acorns will be found very nourishing. Carrots and boiled potatoes mixed in hay-tea will be found not only conducive to health, but promote the growth of pigs.

The principal time for fattening pigs is in October; February or March is also a period for this business, but not held in such estimation as the former. The food recommended in this process is of a farinaceous

nature which is best mixed with milk. Nothing will fatten pigs quicker than malt-barley given whole. Potatoes and acorns are nearly as beneficial. But no pigs can be so well fed or fattened as on premises where the dairy is extensive. Butter-milk, skimmed milk, and barley-meal, with a moderate allowance of peas or beans, are more useful than any other food: such diet does not disturb digestion, and produces very healthy meat. Distilleries are also excellent places for fattening hogs.

DOGS.

THE next subject to which we must turn our attention, and though it has come the last under our consideration, is by no means the least important, is the various diseases of dogs, their different classifications, and inquiry into their nature and utility.

In a wild state, dogs are not very abundant at the present day; these being generally found in America and Africa; but being possessed of considerable courage, and having a natural ferocity of disposition, they are rendered very troublesome and formidable opponents to all inhabitants dwelling in the neighbourhood of their resorts.

In a domesticated state how very materially is this animal's nature altered! the friend and companion of man; like the horse, he becomes universally esteemed and sought after; the most intelligent of all quadrupeds, and yielding to none in docility and speed; in proportion to its size, possessing great strength; in form, both beautiful and noble, and surpassing all

animals in vivacity, and that invaluable gift of an unerring scent; and above all, but little inferior to the human race in its testimony of gratitude and sincerity. He forgets nor friend nor foe, although generally more affected by the gratuitous favours he receives, than mindful of undeserved injuries; the first he ever remembers with affection, and the latter are quickly dispelled. Ever zealous in his master's cause, he does not flinch in the hour of danger, but is ready to defend him, and is never found deficient in the trust reposed in him, keeping a vigilant eye over all property it is his duty to guard. Equally useful in every occupation of life; the shepherd is less obeyed by the flocks than his dog; the huntsman and every lover of field sport could derive neither benefit nor enjoyment without this companion: and in many parts the mastiff or bull-dog is the sole guardian against unwarrantable intruders; and in the cold regions of the north, mankind would be unable to trade, or procure food, without the assistance of dogs.

GENERAL HABITS, &c.

Dogs sleep but little; and during all times of repose, even after most fatiguing journeys, they are as easily aroused by noise as if they were untired; waking or sleeping, their hearing being equally acute. They never perspire, and when weary, usually hang the tongue out of the mouth. Their dung and urine are very pernicious to vegetable matter; and as if conscious of this, they never drop either but where no harm can accrue. Dogs have six cutting teeth in both

the upper and lower jaws, pointed, and longer at the sides than in the centre of the mouth; next come four canine teeth, one on each side, above and below; after which come the six grinders. Till a year old they crouch their hinder parts to pass their urine, after which period they raise one leg and emit it sideways; and whenever they pass a place where a dog has lately performed this function, they seldom fail to do the same.

THE BULL-DOG.

This animal may be placed at the head of his species, and derives his name from a natural antipathy he bears to the bull, and was formerly in great requisition when that cruel sport of bull-baiting was in vogue. He is, probably, the most courageous animal in the world, and bears a most terrific appearance. He is low in stature, but remarkably strong and muscular; the head is short, the forehead wide, the nostril distended, and the projection of the under jaw beyond the upper gives a peculiar ferocity of aspect; the whole countenance exhibits a suspicious and designing leer; but in a state of domestication he is usually inoffensive unless provoked and irritated. The race is peculiar to Great Britain, but it is not now neither numerous, nor is such care taken as formerly to propagate the thoroughbred breed; those of the brindled kind are looked upon as the best. This animal never barks until he has bitten, and once excited or urged by his master, no pain or punishment will prevent him obtaining his ends.

The valour of this dog in attacking the bull, the ferocity he displays in the encounter, and the unconquerable and determined obstinacy with which he perseveres in maintaining his hold, are truly astonishing.

Many years ago, when bull-baiting formed a very favourite amusement for Englishmen in holiday-times, in one of the northern counties, a young man, confident of the courage of his dog, laid some trifling wager that he would, at separate times, cut off the animal's feet, and that after each amputation the dog would attack the bull. The barbarous experiment was allowed and tried, and the dog horribly mutilated and pained as he was, continued to attack and seize the bull with unabated ferocity and eagerness.

Of the true and genuine breed, there are not many now to be found. It was supposed that two of these dogs let loose at once were a match for a bull, three for a bear, and four for a lion.

THE MASTIFF.

This breed of dogs was early celebrated; and mention is made of them in the time of the Romans, being noted for their ferocity and innate courage.

It is peculiar to Great Britain, and is generally used as a watch-dog, which duty it performs not only with uncommon fidelity, but frequently displays considerable judgment.

Their ferocity is increased or diminished according to the degree of restraint in which they are kept; such as are constantly chained being dangerous to approach. To their masters, however, they are both mild in their

manners, and grateful and solicitous for every attention.

Some of these animals will allow a stranger to come into the premises they are appointed to watch over, and will go peaceably along with him through every portion of them, so long as he touches nothing; but the moment he attempts to lay hold of any of the property, the animal informs him, first, by a gentle growling; and if that prove ineffectual, by harsher means.

At night they are particularly watchful, and it is dangerous to approach them unless well known, and even then not always, as the following will testify:—

A very large mastiff was kept by Sir H. Lee of Ditchley, Oxfordshire, the ancestor of the late earls of Litchfield. This dog never received any particular kindness or attention from his master, and was kept solely to guard the house and yard.

One night Sir Harry retired to his chamber attended by his favourite valet, who was an Italian, when the mastiff followed them up the stairs, an unusual circumstance, never having been known to do the like before. To his master's astonishment, the dog presented himself at the bed-room door, and being deemed an intruder, he was instantly ordered to be driven away; this being done, and the door shut, the animal began to paw and scratch violently at the door, and howled loudly for admission. The servant was directed to turn him away again, but the dog was not to be discouraged, and he returned again, and appeared more importunate than before.

The apparent obstinacy of the animal wearied Sir Harry, who was astonished beyond measure that the dog should display so much fondness for the society of a master who had never shown him the slightest kindness, and desiring to retire to rest, he ordered the

servant to open the door, which done, the mastiff, with a significant wag of the tail, and a mingled look of affection and gratification, quietly walked in, and crawling under the bed, laid himself down, as if desirous of taking up his night's quarters there.

To save further annoyance, not from any partiality for the dog's company, Sir Harry granted the desired indulgence. The valet retired, and all was quiet. After several hours, the chamber-door opened, and a person was heard gently stepping across the room. Sir Harry, waking from his sleep, spoke, and the dog immediately rushing from his covert, sprung upon the intruder, and seizing him, fixed him to the spot. The alarm was given and a light procured, and the person thus rivetted to the floor was discovered to be the favourite valet, who, as soon as the dog was removed, and he had recovered from his fright, began to apologise for the intrusion, and gave some plausible pretext for his unwonted appearance; suspicion, however, being aroused in Sir Harry's mind, he resolved to investigate the business further by referring the subject to a magistrate.

The perfidious Italian, alternately terrified by the dread of punishment, and soothed by the hopes of pardon, at length confessed that it was his intention to murder his master, and then to rob the house. This diabolical design was frustrated solely by the instinctive attachment of the dog to his master, which seems to have been directed on this occasion by an interference of Providence. How else could he have learned to submit to injury and insult for his well-meant services, and finally to seize and detain a person, who, it is probable, had shown him more kindness than his owner had ever done? A full-length picture of Sir Harry, with the mastiff by his side, and the words, " more

faithful than favoured," is still preserved among the family pictures.

The mastiff surpasses the bull-dog in size, height, bone, and strength, and always barks before he bites; his ears are pendulous, his countenance commanding, and his eyes fiercely expressive.

THE BLOOD-HOUND.

This race of dogs were once held in the highest repute on account of their extreme ferocity and the peculiar keenness of their scent. The thorough-bred blood-hound is superior to every other species of hound in size, strength, and courage; he was sometimes, although rarely, employed in the discovering of game that had escaped the mark or vigilance of the hunter; but he was chiefly esteemed for the certainty with which he would scent the footsteps of man, even to the greatest distances.

The genuine breed possess an extraordinary substantial and muscular form, a wide forehead, gradually narrowing towards the nose, an expressive countenance, expansive nostrils, ears of large dimensions, but soft and pendulous, broad at the base, and tapering towards the tip, the tail long, with an erective curve, particularly when in pursuit, and the voice very loud and deep.

This breed is still preserved in great perfection in Spain and Cuba, and other islands of the West Indies, the natives of these last places having been hunted down, and finally exterminated, by means of these animals; the inhumanity, injustice, and cruelty practised

in the Maroons wars, where they were called into action, and drove the inhabitants from their mountain fastnesses, are horrors at which the feeling mind would shudder.

Blood-hounds were formerly used in certain districts lying between England and Scotland, which were much infested by robbers and murderers, and a tax was laid on the inhabitants for keeping and maintaining a certain number of these animals. But as the arm of justice is now extended over every part of the country, and there are now no secret recesses where villany can lie concealed, their services are happily become unnecessary; at that time too deer-stealing was a very prevalent crime, and the forest and the park-keepers were chiefly employed in perpetual watching and nocturnal warfare, in which they were materially assisted by the blood-hound.

Some few are still to be found in this country; but the finest and most ferocious come from the Manillas in the East Indies, and from Cuba in the West Indies.

Mr. Boyle informs us, that a person of quality, to make trial whether a young blood-hound was well instructed, caused one of his servants to walk to a town four miles off, and then to a market-town three miles from thence. The dog, without seeing the man he was to pursue, followed him by the scent to the above mentioned places, notwithstanding the multitude of market people that went along the same road, and of travellers who had occasion to cross it; and when he came to the chief market-town, he passed through the streets without taking notice of any of the people there, and ceased not till he had gone to the house where the man he sought had rested himself, and where he found him in an upper room, to the wonder

of those who had accompanied him in the pursuit These hounds are easily taught, and very tractable with those to whom they are known.

THE NEWFOUNDLAND DOG.

This animal, which came originally from the island whence it derives its name, has a remarkably pleasing countenance, is exceedingly docile, and of great size and sagacity. The feet of this dog are more palmated than usual, which structure enables it to swim very fast, to dive easily, and to bring up any thing from the bottom of the water.

The sagacity of this animal has long been noted, a remarkable instance is quoted by many authors.

In the reign of Charles the Fifth, a gentleman named Aubrey de Montidier, while taking a solitary walk in the neighbourhood of Paris, was murdered and buried under a tree: his dog, which he had left at home, went out at night to search for his master, and discovered his grave in the forest; having remained some days on the spot, his hunger compelled him to return to the city. He hastened to the Chevalier Ardilliers, a friend of the deceased; and by his melancholy howling, gave him to understand that their common friend was no longer in existence. Ardilliers offered the dog food, and endeavoured to quiet him by caresses, but the distressed animal continued to howl, licked his feet, and laying hold of his coat pulled him towards the door. Ardilliers at length resolved to follow him: the dog led him from street to street, and conducted him from the city to a large oak in the forest, where

he began to howl louder, and scratch the earth with his feet. Aubry's friend surveyed the spot with melancholy foreboding, and ordered his servant to dig up the earth; in a little time he discovered the body of his friend. Some time after the dog accidentally met the murderer of his master; he rushed upon him, barked, and attacked him with so much fury, that the spectators could not without difficulty extricate him: the same circumstance occurred several times. The faithful animal, which was in general as quiet as a lamb, became like a raging tiger every time he saw this person.

This circumstance excited great astonishment, and some suspicions having arisen, it was remembered that this man, (the Chevalier de Maquer), on several occasions had betrayed symptoms of enmity to Aubry; and several other circumstances combining, the evidence was brought almost to a certainty. The king hearing of the affair, was desirous of being convinced with his own eyes whether the dog was in the right, and that the animal which fawned upon every body else, attacked Maquer as soon as he perceived him. At that period it was customary, when the evidence was not decisive, to determine the fate of the accused by single combat. A time and place was therefore appointed; the Chevalier entered the lists armed with a lance; the dog was let loose, and a most dreadful contest took place. The chevalier made a thrust, but the dog springing aside, seized him by the throat, and threw him down. The villain now confessed his crime; and the king, that the remembrance of the faithful animal should be transmitted to posterity, caused to be erected to him, in the forest where the murder was committed, a marble monument, with the following inscription:—

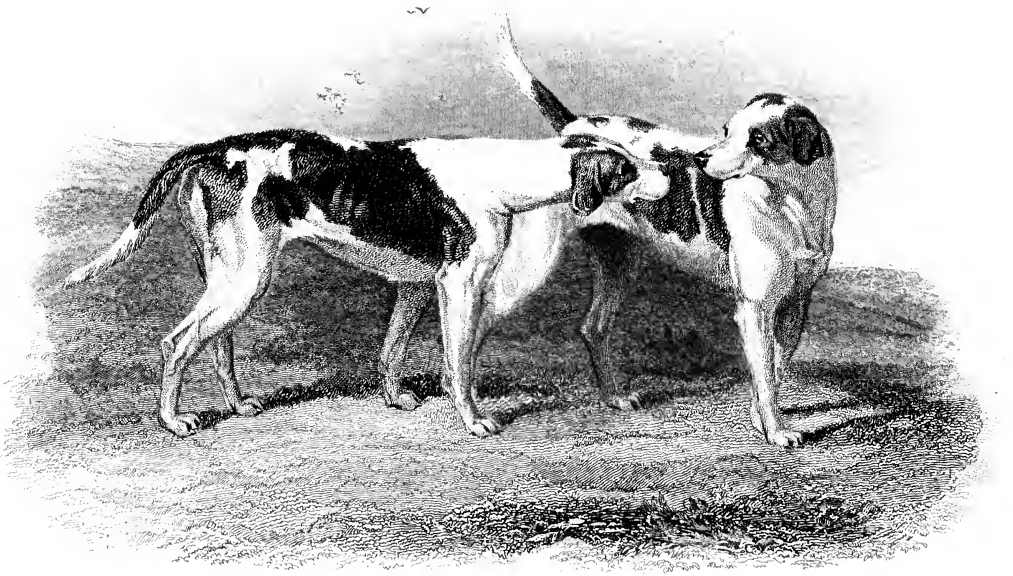
"Blush, hard-hearted wretch! an irrational animal knows and loves gratitude; and thou, perpetrator of crimes, in the moment of guilt, be afraid of thine own shadow."

In the month of December, 1803, as a gentleman was going along the path that leads from Kennington Common to Camberwell, and which stood between two ditches, he observed several children playing at a distance, and almost at the same instant perceived one of them fall into the ditch: he hastened to the spot, accompanied by a Newfoundland dog he had with him; the sagacious animal no sooner perceived the child struggling in the water, than he plunged in, and seizing her by the hair of her head, brought her with some difficulty to the side of the footpath; when with the assistance of his master she was drawn out, without sustaining any other injury than a violent retching, occasioned by the stagnant water she had swallowed, and which was of so foul a nature that it would have caused almost immediate suffocation

THE SIBERIAN, OR WOLF DOG.

This animal is found an inhabitant of the North; and is especially used by the inhabitants near the Arctic Circle for purposes of draught instead of the horse.

In Kamptschatka is found the finest breed; they possess remarkable strength, and five of them when harnessed will draw a sledge containing three persons with a small quantity of luggage. The method of using them is as follows: they are yoked two and two together, the fifth acting as leader, and will occasionally



perform a journey of two hundred and sixty miles in three days and a half. If the leader is steady and docile, he is rendered very valuable, and often produces the sum of ten pounds when sold.

The deep snow over which these dogs have to pass, and the terrible storms they are compelled at times to encounter when their master cannot see the path, nor even keep his eyes open, and the animals scarcely ever missing their way, render them invaluable, where horses would be quite useless. In times when it is found impracticable to proceed, the dogs will lie around their master and keep him warm, at the same time defending him from all danger.

The Greenland-dog is something of the same species, approaching to the wolf; but are generally white with a black face; sometimes they are piebald.

THE FOX-HOUND.

This is a race of dogs to which great attention has been paid in the rearing during many years; and after a variety of crossing and re-crossing, it is supposed to have arrived at perfection. There are certain points essential to this breed; the legs should be very straight, the feet round, but not too large, the shoulders thrown back, the chest deep, the breast tolerably wide, the head small, the back broad, the neck thin, the tail thick and bushy, and a perfect symmetery in the whole body.

Fox-hunting for years has been the favourite amusement of this country; and this doubtless has tended to our surpassing our continental neighbours in the breed of both hunters and hounds.

This sport has been admirably described by Mr. Beckford, from whom we shall quote:—

"The hour in the morning most favourable to the diversion is certainly an early one. The hounds should be at the cover at sun-rising.

——————— Delightful scene!
Where all around is gay, men, horses, dogs;
And in each smiling countenance appears
Fresh blooming health, and universal joy.

Now let your huntsman throw in his hounds as quietly as he can, and let two whippers-in keep wide of him on either hand, so that a single hound may not escape them; let them be attentive to his halloo, and be ready to encourage or rate, as that directs: he will, of course, draw up the wind. Now, if you can keep your brother sportsmen in order, and put any discretion into them, you are in luck; they more frequently do harm than good: if it be possible, persuade those who wish to halloo the fox off, to stand quite under the cover side, and on no account to halloo him too soon; if they do, he most certainly will turn back again: could you entice them all into the cover, your sport would, in all probability, not be the worse for it.

"How well the hounds spread the cover! The huntsman you see is quite deserted, and his horse, which so lately had a crowd at his heels, has not now one attendant left. How steadily they draw! you hear not a single hound; yet none are idle. Is not this better than to be subject to continual disappointment from the eternal babbling of unsteady hounds?

——————— See! how they range,
Dispers'd, how busily this way and that
They cross, examining, with curious nose,

Each likely haunt. Hark! on the drag I hear
Their doubtful notes, preluding to a cry,
More nobly full and swelled with every mouth.

"How musical their tongues! Now, as they get nearer to him, how the chorus fills! Hark! he is found. Now where are all your sorrows, and your cares, ye gloomy souls?—or where your pains and aches, ye complaining ones?—one halloo has dispelled them all! What a crash they make! and echo seemingly takes pleasure to repeat the sound. The astonished traveller forsakes his road, lured by its melody; the listening ploughman now stops his plough; and every distant shepherd neglects his flock, and runs to see him break. What joy!—what eagerness in every face!

How happy art thou, man, when thou'rt no more
Thyself! when all the pangs that grind thy soul,
In rapture, and in sweet oblivion lost,
Yield a short interval and ease from pain!

"Mark, how he runs the cover's utmost limits, yet dares not venture forth! the hounds are still too near. That check is lucky! now if our friends head him not, he will soon be off. Hark! they halloo—by Jove, he's gone!

——————— Hark! what loud shouts
Re-echo through the groves! he breaks away,
Shrill horns proclaim his flight. Each straggling hound
Strains o'er the lawn to reach the distant pack.
'Tis triumph all, and joy!

Now huntsman get on with the head hounds! the whipper-in will bring on the others after you: keep an attentive eye on the leading hounds, that should the scent fail them, you may know at least how far they brought it.

" Mind *Galloper* how he leads them ! It is difficult to distinguish which is first, they run in such style ! yet *he* is the foremost hound. The goodness of his nose is not less excellent than his speed ! How he carries the scent !—and when he loses it, see how eagerly he flings to recover it again ! There—now he's at head again ! See how they top the hedge !—now, how they mount the hill !—Observe what a head they carry ! and show me if you can, one shuffler or skirter amongst them all ; are they not like a parcel of brave fellows, who, when they undertake a thing, determine to share its fatigues and its dangers equally amongst them ?

——— Far o'er the rocky hills we range,
And dangerous our course ; but in the brave
True courage never fails. In vain the stream
In foaming eddies whirls, in vain the ditch
Wide-gaping threatens death. The craggy steep,
Where the poor dizzy shepherd crawls with care,
And clings to every twig, gives us no pain ;
But down we sweep, as stoops the falcon bold
To pounce his prey. Then up th' opponent hill,
By the swift motion slung, we mount aloft :
So ships in winter seas now sliding sink
Adown the steepy wave, then toss'd on high
Ride on the billows, and defy the storm.

It was then the fox I saw as we came down the hill : those crows directed me which way to look, and the sheep ran from him as he passed along. The hounds are now on the very spot, yet the sheep stop them not, for they dash beyond them. Now, see with what eagerness they cross the plain ! *Galloper* no longer keeps his place,—*Brusher* takes it ! see, how he flings for the scent, and how impetuously he runs ! How eagerly he took the lead, and how he strives to keep it ! Yet *Victor* comes up apace !—he reaches him !—

See what an excellent race it is between them! It is doubtful which will reach the cover first!—How equally they run!—how eagerly they strain! Now, *Victor—Victor!*—Ah! *Brusher*, you are beat; *Victor* first tops the hedge! See there—see, how they all take it in their strokes!—the hedge cracks with their weight, so many jump at once! Now hastes the whipper-in to the other side of the cover; he is right, unless he head the fox.

> Heav'ns! what melodious strains! how beat our hearts
> Big with tumultuous joy! the loaded gales
> Breathe harmony; and as the tempest drives
> From wood to wood, through every dark recess
> The forest thunders, and the mountains shake.

Listen! the hounds have turned. They are now in two parts. The fox has been headed back, and we have changed at last.

"Now, my lad, mind the huntsman's halloo, and stop to those hounds which he encourages. He is right!—that doubtless is the hunted fox! Now they are off again!

> What lengths we pass! where will the wand'ring chase
> Lead us bewildered? smooth as swallows skim
> The new-shorn mead, and far more swift we fly.
> See my brave pack; how to the head they press,
> Jostling in close array; then more diffuse
> Obliquely wheel, while from their op'ning mouths
> The vollied thunder breaks.
> ———————— Look back and view
> The strange confusion of the vale below,
> Where sore vexation reigns;————
> ———————— Old age laments
> His vigour spent; the tall, plump, brawny youth
> Curses his cumbrous bulk; and envies now
> The short pygmean race, he whilom kenn'd
> With proud insulting leer. A chosen few
> Alone the sport enjoy, nor droop beneath
> Their pleasing toils.

" Ha ! a check. Now for a moment's patience. We press too close upon the hounds !—Huntsman, stand still : as yet they want you not. How admirably they spread !—how wide they cast ! Is there a single hound that does not try ? If such an one there be, he ne'er shall hunt again. There, *Trueman* is on the scent !—he feathers, yet still is doubtful : 'tis right ! how readily they join him ! See those wide-casting hounds, how they fly forward to recover the ground they have lost ! Mind *Lightning* how she dashes ! and *Mungo*, how he works ! Old *Frantic*, too, now pushes forward ; she knows as well as we the fox is sinking.

> ———————— On ! yet she flies, nor yields
> To black despair. But one loose more, and all
> His wiles are vain. Hark ! through yon village now
> The rattling clamour rings. The barns, the cots,
> And leafless elms, return the joyous sounds.
> Through ev'ry homestall, and through ev'ry yard,
> His midnight walks, panting, forlorn, he flies ;
> ———————————— Th' unerring hounds
> With peals of echoing vengeance close pursue.

" Huntsman, at fault at last ! How far did you bring the scent ? Have the hounds made their own cast ?—Now make yours. You see that sheep-dog has been coursing the fox !—get forward with your hounds, and make a wide cast.

" Hark ! that halloo is indeed a lucky one. If we can hold him on, we may yet recover him ; for a fox, so much distressed, must stop at last. We now shall see if they will hunt, as well as run ; for there is but little scent, and the impending cloud still makes that little less. How they enjoy the scent ! see how busy they all are, and how each in his turn prevails.

" Huntsman, be quiet ! Whilst the scent was good, you pressed on the hounds ;—it was well done Your

hounds were afterwards at fault;—you made your cast with judgment, and lost no time. You now must let them hunt; with such a cold scent as this you can do no good. They must do it all themselves. Lift them now, and not a hound will stop again. Ha! a high road at such a time as this, when the tenderest-nosed hound can hardly own the scent!—Another fault? That man at work, then, has headed back the fox. Huntsman! cast not your hounds now, you see they have overrun the scent; have a little patience, and let them, for once, try back.

"We now must give them time: see where they bend towards yonder furze brake; I wish he may have stopped there. Mind that old hound, how he dashes o'er the furze; I think he winds him. Now for a fresh *entapis*:—Hark! they halloo!—Aye, there he goes.

"It is near over with him; had the hounds caught view he must have died. He will hardly reach the cover;—see how they gain upon him at every stroke! It is an admirable race; yet the cover saves him.

"Now be quiet, and he cannot escape us; we have the wind of the hounds and cannot be better placed;—how short he runs!—he is now in the very strongest part of the cover. What a crash! every hound is in, and every hound is running for him. That was a quick turn!—Again, another! he's put to his last shifts. Now *Mischief* is at his heels, and death is not far off. Ha! they all stop at once; all silent, and yet no earth is open. Listen!—now they are at him again. Did you hear that hound catch view? they had overrun the scent, and the fox lain down behind them. Now *Reynard* look to yourself. How quick they all give their tongues! Little *Dreadnought*, how he works him! How close *Ven-*

geance pursues! how terribly she presses!—It is just up with him—gods! what a crash they make! the whole wood resounds. That turn was very short. There—now—aye—now they have him.—Whoo—hoop!"

A pack of fox-hounds should not be too numerous; and to be good, they must be kept in constant employ. Forty couple at the most are always sufficient, and these should be taken into the field about three times a week. Too many hounds in the field at once always spoil the sport.

THE STAG-HOUND

Is a most majestic animal, and next to the blood-hound, is the most powerful of his species. His whole appearance is particularly dignified and majestic, and his countenance very expressive. They had their origin from the fox-hound and blood-hound. This breed is not very numerous at the present. A striking proof of the spirit and perseverance of the hound is furnished in the following anecdote:—

"Many years since, a very large stag was turned out of Whinfield Park, in the county of Westmoreland, and was pursued by the hounds, till by fatigue or accident the whole pack was thrown out, except two staunch and favourite dogs, which continued the chase the greatest part of the day. The stag returned to the park whence he set out; and as his last effort, leaped the wall and expired as soon as he had accomplished it. One of the hounds pursued him to the wall; but being unable to get over, lay down, and al-

most immediately expired; the other was also found dead at a little distance.

The length of the chase was uncertain; but as they were seen at Redkirks, near Annan, in Scotland, distance by the post-road about forty-six miles, it is conjectured that the circuitous and uneven course they might be supposed to take could not be less than one hundred and twenty miles. To commemorate this fact, the horns of the stag, which were the largest ever seen in that part of the country, were placed in a tree of enormous size in the park, afterwards called Hart-horn Tree. But they have been since removed; and are now at Julian's bower in the same county."

THE GREYHOUND

Is the swiftest of the dog species, and his formation is beautiful, delicate, and majestic; having the body long, the head neat and elongated, the teeth very white and sharp, the ears little, the neck straight, the mouth long, the breast full, the legs long and straight, and the ribs round, strong, full of sinews, and taper about the belly. He is easily trained for the chase when twelve months old, and used generally to be kept by royalty for the purposes of field sports. The original name of this tribe was Gaze-hound, and at what time it was changed does not appear clear.

The invincible ardour and determined progress of these animals will surmount every obstacle; their energetic velocity in pursuit of game is not to be surpassed; and notwithstanding their apparent natural simplicity and placid demeanour, they will display remarkable instances of fidelity, sagacity, and courage

One of this species, named *Rajah*, the property of a gentleman in Hertfordshire, after a very long chase, in which the hare had been turned nearly a dozen times, killed her single-handed, but was so completely tired out, that he lay down panting by her side, seemingly incapable of stirring. Two countrymen, perceiving the situation of the dog, and the master not coming up, hoped to secure the prize; but upon going to seize it, the greyhound sprang up, took the hare in his mouth, and ran with it to his master, the fellows pursuing with stones and sticks. When he met his master he laid down the hare at his feet, and immediately turning round, flew at the men, but was so enervated, that he dropped down dead; by proper attention, however, he was fortunately restored, and continued long a faithful servant of his master.

Greyhounds should never be fed with horse-flesh. Sheep's-head or other broth, mixed with biscuit, is the most wholesome food, and will make them thrive well and look healthier than any thing else.

It was doubted whether the greyhound possessed that instinctive sagacity peculiar to many other breeds. The following will prove that he is no ways deficient:—

Mr. Moore, a resident at Windsor in Berkshire, desired some of his friends who lived in the north of England to obtain for him a well-bred greyhound. His application having proved successful, the hound was conveyed by the waggon to London, and thence through various hands to Windsor, the place of its destination. After a confinement of a couple of days, with every attention in food, &c., the dog was left at liberty, apparently satisfied with his situation, and the caresses he received. The next day he suddenly departed, and the gentleman soon afterwards received a

letter, informing him that the greyhound had reached the place of his former residence in Yorkshire before the return of the waggon by which he was originally sent to London.

THE TERRIER

Is of the hound tribe, and is particularly keen and active in his pursuit of game, having a natural and instinctive enmity with the fox, the martin, the badger, the wild rabbit, the weazel, the polecat, and the rat; in many instances he wages incessant war with the domestic cat. In all establishments where the fox-hound is kept, these animals are essentially necessary to set the game a foot, and generally follow in pursuit, being but little inferior to any in speed.

There are two kinds of terriers; the one with short legs, long back, and commonly of a black or yellowish colour, mingled with white; the other more sprightly in appearance, with a shorter body, and the colour reddish brown or black.

The following anecdote is illustrative of the cunning of this animal:—

A gentleman of Whitmore in Staffordshire, used to go twice a year to London; and being fond of exercise, generally performed the journey on horseback, accompanied most part of the way by a faithful little terrier, which, lest he might lose it in town, he always left to the care of his landlady at St. Alban's; and on his return he was sure to find his little companion well taken care of. But on his calling one time as usual for his dog, the landlady appeared before him with a woeful countenance—

"Alas! sir," said she, "your terrier is lost. Our great house-dog and he had a quarrel; and the poor terrier was so worried and bitten before we could part them, that I thought he never could have got the better of it. However, he crawled out of the yard, and no one saw any thing of him for nearly a week. He then returned, and brought with him another dog, considerably larger than ours, and they both together fell upon our great dog, and bit him so unmercifully that he has scarcely since been able to go about the yard, or to eat his meat. Your dog and his companion then disappeared, and have never since been seen at St. Alban's."

The gentleman heard the story with patience, and endeavoured to reconcile himself to the loss. On his return home, however, he found his little terrier; and on inquiring into circumstances, was informed that he had been at Whitmore, and had coaxed away the great dog, which it seems had, in consequence, followed him to St. Alban's, and completely avenged his injury.

THE HARRIER

Derives its name from the avidity with which it pursues the hare: it is closely allied to the Beagle, but is larger, swifter, and more vigorous.

Of this species there are two different kinds, viz., the northern, or fleet Harrier, and the southern hound; the northern dog, doubtless, originated from a double cross between the small beagle, the southern hound, and the dwarf fox. The superior excellence of this breed is acknowledged in every portion of the kingdom, and are cultivated under the exclusive name of

Harriers, and are trained solely to hare-hunting. The southern hound is supposed to be the original breed of this dog, and is still found in some of the swampy districts of the kingdom, and are much higher than the harrier.

Nothing can exceed the ardour with which the thorough-bred harrier pursues the sports of the chase, often outstripping the fleetest huntsman.

A mixed breed between this and the large terrier, forms a strong, active, and hardy hound, which is used in hunting the otter. It is rough, wire-haired, thick quartered, and thin shouldered. The property, breeding, matching, and training these dogs, make up the business of many persons lives.

Mr. Beckford says, that, " Harriers to be good, like all other hounds, must be kept to their own game. If you run a fox with them you spoil them. Hounds cannot be perfect unless used to one scent, and one style of hunting. Harriers run fox in so different a style from hare, that it is of great disservice to them, when they return to hare again: it makes them wild, and teaches them to skirt. The high scent which a fox leaves, the straightness of his running, the eagerness of the pursuit, and the noise that generally accompanies it, all contribute to spoil a harrier.

" It is a fault in a pack of harriers to go too fast. A hare is such a little timorous animal, that we cannot help feeling some compassion for at the very time we are pursuing her destruction: we should give scope to all her little tricks, nor kill her foully and overmatched. Instinct instructs her to make a good defence when not unfairly treated; and as far as her safety is concerned, she has more cunning than the fox, and makes many shifts to save her life far beyond all his artifice.

" They who like to rise early, have amusement in seeing the hare trailed to her form ; it is of great service to hounds ; it also shows their goodness to the huntsman more than any other hunting, as it discovers to him those who have the most tender noses."

The same author thus describes the sport of hare-hunting, and lays down some excellent rules :—

" When the game is found, you cannot be too quiet. The hare is an animal so very timorous, that she is frequently headed back, and your dogs are liable to overrun the scent at every instant ; it is best, therefore, to keep a considerable way behind them, that they may have room to turn, as soon as they perceive they have lost the scent ; and if treated in this manner, they will seldom overrun it much. Your hounds, through the whole chase, should be left almost entirely to themselves, nor should they be hallooed too much. When the hare doubles, they should hunt through those doubles : nor is a hare hunted fairly, when hunted otherwise. They should follow her every step she takes, as well over greasy fallows, as through large flocks of sheep ; nor should they ever be cast, but when nothing can be done without it.

> ———————— Let all be hushed!
> No clamour loud, no frantic joy be heard ;
> Lest the wild hound run gadding o'er the plain,
> Untractable, nor hear thy chiding voice.

" The natural eagerness of the hounds will, at such a time as this, frequently carry even the best of them wide of the scent, which too much encouragement, or pressing too close upon them, may continue beyond possibility of recovery : this should be always guarded against. After a little while you have less to fear. You may then approach them nearer, and encourage them more ; leaving, however, at all times, sufficient

room for them to turn should they overrun the scent. On high roads, and dry paths, be always doubtful of the scent, nor give them much encouragement; but when a hit is made on either side, you may halloo as much as you please, nor can you then encourage your hounds too much. A hare generally describes a circle as she runs; larger or less, according to her strength, and the openness of the country. In enclosures, and where there is much cover, the circle is for the most part so small, that it is a constant puzzle to the hounds: they have a gordian knot in that case ever to unloose; and though it may afford matter of speculation to the philosopher, it is always contrary to the wishes of the sportsman.

> Huntsman! her gait observe; if in wide rings
> She wheel her mazy way, in the same round
> Persisting still, she'll foil the beaten track.
> But if she fly, and with the fav'ring wind
> Urge her bold course, less intricate thy task;
> Push on thy pack.

"Besides running the foil, they frequently made doubles, which is going forward, to tread the same steps back again, on purpose to confuse their pursuers; and the same manner in which they make the first double, they generally continue, whether long or short. This information, therefore, if properly attended to by the huntsman, may also be of use to him in his casts.

"When they make their double on a high road or dry path, and then leave it with a spring, it is often the occasion of a long fault: the spring which a hare makes on these occasions is hardly to be credited, any more than is her ingenuity in making it; both are wonderful.

——— ——— Let cavillers deny
That brutes have reason; sure 'tis something more;
'Tis heav'n directs and stratagems inspire,
Beyond the short extent of human thought.

" She frequently after running a path a considerable way, will make a double, and then stop till the hounds have passed her; she will then steal away as secretly as she can, and return the same way she came. This is the greatest of all trials for hounds: it is so hot a foil, that in the best packs there are not many hounds that can hunt it: you must follow those hounds that can, and try to hit her off where she breaks her foil, which in all probability she will soon do, as she now flatters herself she is secure. When the scent lies bad in cover, she will sometimes hunt the hounds.

——— ——— The covert's utmost bound
Slily she skirts; beyond them cautious creeps,
And in that very track, so lately strain'd
By all the steaming crowd, seems to pursue
The foe she flies.

" When the hounds are at a check, make your huntsman stand still, nor suffer him to move his horse one way or the other: hounds lean naturally towards the scent, and if he does not say a word to them, will soon recover it.

" In a fine day, good hounds seldom give up the scent at head; if they do, there is generally an obvious reason for it: this observation a huntsman should always make; it will direct his cast. If he be a good one, he will be attentive as he goes, not only to his hounds, nicely observing which have the lead and the degree of scent they carry; but also to the various circumstances that are continually happening from change of weather and difference of ground. He will also be mindful of the distance which the hare keeps

before the hounds, and of her former doubles, and he will remark what point she makes to. All these observations will be of use should a long fault make his assistance necessary; and if the hare have headed back, he will carefully observe whether she met any thing in her course to turn her, or turned of her own accord. When he casts his hounds, let him begin by making a small circle; if that will not do let him try a larger; he afterwards may be at liberty to persevere in any cast he may judge most likely. As a hare generally revisits her old haunts, and returns to the place where she was first found, if the scent be quite gone, and the hounds can no longer hunt, *that* is as likely a cast as any to recover her. Let him remember this in all his casts, that the hounds are not to follow his horse's heels, nor are they to carry their heads high, and noses in the air. At these times they must try for the scent, or they will never find it, and he is either to make his cast slow or quick, as he perceives his hounds try, and as he perceives the scent is either good or bad.

"Let the huntsman prevent the hounds as much as he can from chopping hares. When hounds are used to it, a hare must be very wild, or very nimble, to escape them. In a furzy country, hounds are apt to chop hares, for it is the nature of these animals either to leap up before the hounds come near them, and *steal away*, as it is called, or else to lie close, till they put their very noses upon them. Hedges, also, are very dangerous; if the huntsman beat the hedge himself, which is the usual practice, the hounds are always upon the watch, and a hare must have good luck to escape them all. The best way to prevent it, is to have the hedge well beaten at some distance before the hounds.

" Hares seldom run so well as when they do not know where they are. They run well in a fog, and generally take a good country. If they set off down the wind, they seldom return; you then cannot push on your hounds too much. When the game is sinking, you will perceive your old hounds get forward; they then will run at head.

> Happy the man, who, with unrivall'd speed,
> Can pass his fellows, and with pleasure view
> The struggling pack; how in the rapid course
> Alternate they preside, and jostling push
> To guide the dubious scent; how giddy youth
> Oft babbling errs, by wiser age reprov'd;
> How, niggard of his strength, the wise old hound
> Hangs in the rear, 'till some important point
> Rouse all his diligence, or till the chase
> Sinking he finds; then to the head he springs,
> With thirst of glory fir'd, and wins the prize.

" Keep no babblers; for though the rest of the pack soon find them out, and do not mind them, yet it is unpleasant to hear their noise; nor are such fit companions for the rest.

" Keep no hound that runs false; the loss of one hare is more than such a dog is worth. It is but reasonable to give the hounds a hare sometimes.

" It is too much the custom to ride over a dog, and then cry *'ware horse*. Take care not to ride over your hounds: I have known many a good dog spoiled by it. In open ground speak to them first; you may afterwards ride over them if you please; but in roads and paths they frequently cannot get out of your way; it surely then is your business either to stop your horse, or break the way for them, and the not doing it, give me leave to say, is absurd and cruel; nor can

POINTERS.

that man be called a good sportsman who thus wantonly destroys his own sport. Indeed, good sportsmen seldom ride on the line of the tail-hounds.

THE POINTER.

This breed of dogs originally came from Spain, but has now been naturalised in this country, and of late years great attention has been paid to preserve the race in all its purity. The pointer has a short head, a broad forehead, great extension of nose and nostrils, short legs, a square back, and a circular form of body; it is remarkably strong across the loins, and in the hinder quarters.

The colours most esteemed in these dogs, are the white and the brown, or liver-coloured. The Spanish pointer is remarkable for the aptitude and facility with which it receives instructions, and may be said to be almost self-taught; he rarely misses his game, and his perseverance and patience peculiarly adapt him for the recovery of wounded birds; for snipe-shooting, this dog is valuable above all others. On the other hand, the English pointer requires very great care and attention in breaking and training, but will undergo much more fatigue: he is generally used to find partridges and pheasants. In disposition they are docile and tractable, but excessively timid.

No pointer can be considered well taught, and consequently useful, unless he be *staunch* to bird, dog, and gun: this is to say, as soon as a bird or covey is scented, he must stand; when the dogs in advance stand, the other must point, or, in other words, back

instantly; and he must not stir from his own point at the rising of a bird or the firing of the gun, provided the game is neither sprung nor started at which he made his original point.

THE SETTER

Was originally bred from the Spanish pointer, and the largest breed of the English spaniels.

By considerable care and training, it has become the most valuable of our hunting dogs; being at once hardy, nimble, and handsome; possessed of the most exquisite scent and sagacity, while its colour is of a most pleasing variety, and having a disposition alike affable, humble, and affectionate.

The manner in which these dogs seek their game, is thus beautifully described by Somerville :—

> "When autumn smiles, all beauteous in decay,
> And paints each chequered grove with various hues,
> My setter ranges in the mud-shorn fields,
> His nose in air erect; from ridge to ridge
> Panting he bounds; his quartered ground divides
> In equal intervals, nor careless leaves
> One inch untried; at length the tainted gales
> His nostrils wide inhale; quick joy elates
> His beating heart, which, awed by discipline
> Severe, he dares not own, but cautious creeps
> Low covering, step by step, at last attains
> His proper distance: where he stops at once,
> And points with his instructive nose upon
> The trembling prey."

These dogs will frequently take to the water after game, and will fetch it out without hurting a feather;

whereas the pointer, and especially such as are thorough-bred, always avoid it. Over a rough country, and in cold frosty weather, when the ground is very hard, the setter has a very great advantage in having his feet much better defended than those of the pointer.

THE WATER SPANIEL

Is in very high estimation where water-fowl abound; and in wild-duck shooting, he is absolutely indispensable. These animals are remarkably docile, and this is owing, doubtless, to their natural attachment to man.

It is highly essential that they should be broken in early, and should be taught to obey by word of command. When well reared, they are most indefatigable in their pursuit of the fowl, and are most invaluable to all who are fond of water-fowl sporting. Many kinds of dogs will not endure correction, but become sulky and timorous; this beautiful animal, however he may feel disposed towards strangers, is not to be daunted in his affection, even under blows and ill-usage, from his master. When trained in infancy they are remarkably quick, and need but little beating.

The attachment of a water spaniel was peculiarly displayed in one of those bloody scenes which were frequent during the French Revolution.

Shortly before the termination of Robespierre's dreaded authority, a revolutionary tribunal in one of the northern departments had accused Mons. R., a magistrate, and a man greatly beloved, and found him

guilty of joining in a conspiracy for the overthrow of their power. This gentleman had a water spaniel which he had reared and kept for upwards of twelve years, during which period it had seldom quitted his person. On being cast into prison, his family were driven into exile, his servants dismissed, his house destroyed, and even many of his friends were obliged to seek safety by flight. In the silence of a living tomb he was left to pine in thought, under the iron scourge of a tyrant, whose respite from blood was but to gain, by delay, some additional horror; and who, if he extended life to those whom his wantonness had prescribed even until death became a *prayer*, it was only to tantalise them with the blessing of murder, when he imagined he could more effectually torture them with the curse of existence.

This faithful dog was with him when he was first seized, but was refused admission into the prison. He was seen to return often to the door, but found it shut; he took refuge with a neighbour of his late master, who received him. But (that posterity may judge clearly of the times in which men existed in those turbulent and unsettled times,) it must be added, that this man received the poor dog tremblingly and in secret, lest his humanity for his *friend's dog* should bring him to the scaffold. Every day, at the same hour, the dog returned to the prison-door, but was still refused admittance; he however constantly spent some time there. Such unremitting fidelity at last won the affections of the porter of the prison, and the dog was at length allowed to enter. His joy at seeing his master was unbounded; his master's was not less; it was difficult to separate them; but the honest gaoler, fearing for himself, carried the dog out of the prison, and he returned to his place of retreat.

The next morning, however, he again came back, and continued his visits for some weeks; and once on each day was regularly admitted by the humane gaoler. The poor animal licked the hand of his master, looked at him again, again licked his hand, and after a few mornings, feeling assured of re-admission, departed at the call of the gaoler.

When the day of receiving sentence arrived, notwithstanding the guards, which jealous power, conscious of its deserts, stations around, the dog penetrated into the hall, and crouched himself between the legs of the unhappy man, whom he was about to lose forever. The judges condemned his master; "and may my tears be pardoned," says the benevolent recorder of this fact, "for the burst of indignation—the judges condemned him to a speedy death in the *presence of his dog!*" Mons. R—— was re-conducted to the prison, and the dog, though prevented from accompanying him, did not quit the door for the whole of that night.

The fatal hour of execution arrives with the morning; the prison-door opens; the unfortunate man passes out; his dog receives him at the threshold. His faithful dog *alone*, amongst the thousands that revered and loved him, *dared*, even under the eye of a tyrant, to own a dying friend! He clings to his hand undaunted. "Alas! that hand will never more be spread upon thy caressing head, poor dog!" exclaimed the condemned. The axe falls!—the master dies! But the tender adherent cannot leave the body. He walks round the corse—the earth receives it—and the mourner spreads itself on the grave. On that cold pillar he passed the first night, the next day, and the second night. The neighbour in the meantime, unhappy at not seeing his protege, searches for him, and

guessing the asylum he had chosen, steals forth by night, and finding him as described, caresses and brings him back. The good man tries every gentle way that kindness could devise to make him eat: but a short time afterwards, the dog escaping, regained his favorite place.

O, man! give faith to a sacred truth. Three months passed away, during every morning of which the mourner returned to his loving protector merely to receive his food, and then retired to the ashes of his dead master; and each day he was more sad, more meagre, and more languishing.

His protector at length endeavoured to wean him by tying him up, but he broke his chain, returned to the grave, and *never* quitted it more! It was in vain that all kind means were used to bring him back. He would eat no longer; and for four-and-twenty hours he was observed to employ his weakened limbs digging up the earth that separated him from his master. But his efforts were too vehement for his power; his whole frame became convulsed; he shrieked in his struggles; his attached and generous heart gave way, and he breathed his last gasp with his eyes fixed on the grave, as if he knew he had found and again should be permitted to associate with his master.

In the Sporting Magazine, for 1815, appeared the following observations on the spaniel:—

"This breed of dogs, from the superiority of pointers during the first sporting months, and from their having been found adequate to all purposes where the covers are light, throughout the season, has of late years been greatly neglected; insomuch that the well-bred spaniel is now rarely to be met with. As a proof of this, seldom do we see a whole litter of puppies like each other in marks and colour; nor when grown up, do

they more resemble each other in shape, style of hunting, or last, not least, in strength and courage. It is an old saying, of dogs as well as horses, that a good dog cannot be of a bad colour; nor, as many will infer, of a bad sort. It cannot be denied, that in some, nay, in many instances, arrant curs have proved excellent hunters; and have, in every respect, answered the purposes of the spaniel. As breeders, however, they cannot be depended on. To some of their posterity they may transmit their good qualities; but as, from natural causes, they must in time degenerate, and get fond of vermin, moreover, as the appearance of them is such a discredit to the sportsman, the true spaniel should be substituted in their stead.

Of the few real spaniels now amongst us, the supposed descendants of such as were formerly introduced, when woodcocks were plentier in the western parts of England, we may trace three or four families; the yellow-pied, with fine silky hair; the liver-coloured, long-legged, sharp-eared; as also the liver-spotted, round-eared, short-jointed, both peculiar to Devonshire; and the coal-black, with tan legs and tan spots over the eyes, in Cornwall. These are all supposed to be of a genuine breed; and those which have been well broken have turned out invariably good; because they have ever borne spots and marks as indicative of their family; and because, when broken, they have resembled each other as respectively in their habits and utility. The rough breed, of various colours, and the large, liver-spotted, with very long shaggy ears, seem almost extinct.

"When we speak of breed, however, in the spaniel, we speak of one half only of what is required of this sort of dog. Without good breaking, the best show their origin, and resemble their ancestors only in

appearance. It may be worth our while, therefore, speak of a circumstance so indispensable in the subject before us. As puppies, after weaning and tailing, they should be fed often; indeed, until they are three parts of a year old, and upwards, at least three times a-day. Provided the proper means be used to promote their stamina, their native courage will fully meet the almost incredible fatigue and hardships they will generally have to cope with; and this, at times, in the most inclement season of the year. For this purpose, they should have milk several times in the week, be allowed clean water to lap; and, if possible, a dry green to sport and play on by day, with clean straw, but not hay, to lie on at nights. Nor must we omit the precaution, that children be not allowed to play and toy with them, and that they be by no means allowed to bask before the fire. Much self-command and patience as it requires, it is well worth the sportsman's while himself to enter them, and this should be done before they are a twelvemonth old. They should not, at first, be allowed to range the open fields after larks, and every other incitement to the reverses of control and order. On the contrary, they should be taken directly into cover; and if they range and hunt the same, it is enough. At first, they should only be whistled to, nor should they be either chid or encouraged. Kept constantly in good humour, they will soon learn to work before you, and try the ground with regularity; but flagellation, and the sowing the seeds of ill habits at an early age, should be avoided as much as possible. Various are their dispositions as far as concerns their regard to work at the first onset; some are froward, and others meek; and the howlings of one under flagellation may for ever cow another, whose powers it were possibly worth much

pains to elicit. Being entered, and in some measure shot to, the first season, at the commencement of the next for cover-shooting, they may, with some patience at first, be admitted to regular work. Yet are they inexperienced, inasmuch as they are not aware of the most probable haunts of game; nor do they know how to manage a doubtful scent. In the company of old dogs, however, they improve very fast. At three years old they become very tolerable finders; at four, they are knowing and sagacious in their work; and at five years, they are in the zenith of all their properties and powers. When taking all countries, and the divers kind of work they have to accomplish, and the fatigue they can endure, into consideration, they become the most valuable appendage to the admirers of cover-shooting.

"It would be improper to dismiss the subject, without noticing a circumstance in the treatment of this sort of dog, productive of the most fatal consequences. With many it is a common practice not to enter spaniels till they are two years old, or the third season from whelping; and then, because they range and hunt in cover, they are of a sudden, forsooth, required to understand, and obey commands also. Not so; the instilling this principle so as to act as a constant bias on the conduct of the animal, is the work of time and patience only; the sense of it must be entertained when young, increase with the stature, and grow with the growth. Without this implicit obedience to command, you may have many dogs with you, but no one employed as it ought to be; one shall be far a head hunting upon his own account, and putting up every thing out of shot; another close behind your heels, with his tail between his legs; a third, sneaking and creeping after you at a more respectful distance; while the rest

are ranging so wide on either side of you as to provoke the most patient to the use of execrations, and to oblige him to return home, as he went out, with an empty bag."

THE SPRINGER SPANIEL.

The springer is of two kinds; the larger breed being known under the appellation of the springer-spaniel; and the other, the cocker, or cock-spaniel; this last is particularly expert in raising woodcocks and snipes from their haunts in woods and marshes, through which it ranges with an untirable perseverance.

The proper English springer differs but little from the setter.

The spaniel is of Spanish extraction, whence it derives its name. It is elegant in form, with long pendant ears, and hair gracefully curled or waved, and of a silky softness. Its scent is keen, and it possesses in the fullest perfection the good qualities of sagacity, docility, and attachment. Indeed so strongly has the last existed, that instances have occurred in which the animal had died of grief for the loss of his master.

Of the same breed is that elegant little dog which, in this country, is well known under the appellation of King Charles' dog, as having been the favourite of that monarch, who scarcely ever walked out without being attended by several of them. It has a small rounded head with a short snout, the tail is curved back, the hair is curled, the ears are long, and the feet are webbed.

The large water dog is of an analagous breed with

all these; but he is less handsome, and not so generally in use, except on the sea-coast, where they are to be met with frequently. It has curly hair, which bears a great resemblance to wool; and it swims excellently well, in consequence of the webs between the toes being much larger than those of most other dogs. It is often kept on ship board, and is always found remarkably sagacious, docile, and quick: it can be taught to ring bells, knock at a door, and will frequently go away and fetch things from some considerable distance at the command of his master.

Spaniels are more fit for covert-shooting than the pursuits in which pointers or setters are usually engaged.

"But if the shady woods my cares employ,
In quest of feather'd game my spaniel's beat,
Puzzled th' entangled copse, and from the brake
Push forth the whirring pheasant—high in air,
He waves his varied plumes, stretching away
With hasty wing."

THE SHEPHERD'S DOG

Abounds in all great pasture countries where sheep and cattle are fed to any extent; and here he is of the greatest utility and importance, his voice being more quickly obeyed by those animals than that of the shepherd; and safety and order are the result of his vigilance and care. This breed is found in its most perfect purity in the mountainous and northern parts of Scotland.

It is asserted that all wild dogs in different portions of the world assimilate very nearly to the size, form,

and peculiarities of the shepherd's dog; and on this account, it is supposed to have been the stock whence every other breed of the canine species originated. Of this opinion, are Buffon and Goldsmith.

Their distinguishing characteristics are long coarse hair, a long nose and pricked ears; and in a wild state they are remarkably ferocious. The parriar dog of India, the wild dogs of America and Africa, as well as those used in the northern regions, all approach this species.

THE BEAGLE.

This is the smallest breed of dogs used in the chase, and is more generally employed in hare hunting; although, at the present day, they are scarcer than when slow hunting was in vogue. These hounds are most excellent in their scent of the hare, and are remarkable for the musical melody of their tone. There are two varieties of this dog, the rough beagle and the smooth beagle.

Mr. Beckford speaks strongly against the use of bag foxes, and considers them as void of sport.

"The scent of these," says he, "is *different* from that of other foxes; it is *too good*, and makes hounds idle; besides, in the manner in which they are generally turned out, it makes hounds very wild. They seldom fail to know what you are going about before you begin, and if often used to hunt bag-foxes will become riotous enough to run any thing. A fox that has been confined long in a small place, and carried out many miles, perhaps, in a sack, his own ordure

hanging about him, must needs stink extravagantly. Add also to this account, that he most probably is weakened for want of his natural food and usual exercise, his spirit broken by despair, and his limbs stiffened by confinement; he then is turned out in open ground, without any point to go to; he runs down the wind, it is true, but he is so much at a loss all the while, that he loses a deal of time in not knowing what to do; while the hounds, who have no occasion to hunt, pursue as closely as if they were tied to him.

"Bag-foxes always run down the wind; such sportsmen, therefore, who choose to turn them out, may, at the same time, choose what country they shall run. Foxes that are found do not follow this rule invariably. Strong earths and large covers are great inducements to them, and it is no inconsiderable wind that will keep them from them.

"In rearing fox-cubs, a court is usually appropriated to that purpose, and there they should be kept till they are old enough to take care of themselves. It should be open at the top, and walled in; it must be every way well secured, and particularly the floor of it, which must be either bricked or paved. A few boards fitted to the corners will also be of use to shelter and hide them. Foxes ought to be kept very clean, and have plenty of fresh water; birds and rabbits are their best food; horse-flesh might give them mange, for they are subject to this disorder.

"When cubs are bred in an earth near hand, by adding two or three to the number, it is probable that the old fox will take care of them. This is certain, if they live they will be good foxes, for the others will show them the country. Those turned into an earth should be regularly fed; if once neglected, it is

probable they will forsake the place, wander away, and die for want of food. When the cubs leave the earth, (which they may soon do,) the gamekeeper should throw food for them in parts of the cover where it may be most easy for them to find it; and when he knows their haunts, he should continue to feed them there. Nothing destroys so much the breed of foxes as buying them to turn out, unless care be taken of them afterwards.

"Hence the necessity of encouraging furze covers; they are certain places to find in; and they have this advantage, that the foxes cannot break from them unseen, and they are not so liable to change as in other covers.

"In digging a fox, you should keep room enough, and care should be taken not to throw the earth where it must be moved again. In following the hole, the surest way not to lose it is to keep below it. When the hounds are in want of blood, stop all the holes, lest the fox should bolt out unseen. It causes no small confusion when this happens. The old hounds are dispersed about, and asleep in different places; the horses are often at a considerable distance; and many a fox, by taking advantage of this favourable moment, has saved his life.

"If hounds are in want of blood, and they have had a long run, it is the best way, without doubt, to kill the fox upon the earth; but if they have not run long, if the fox be easy to be digged, and the cover such a one as they are not likely to change in, it does the hounds more good to turn him out upon the earth and let them work for him. It is the blood that will do them most good, and may be serviceable to the hounds and to the horses. Digging a fox is cold work, and may require a gallop afterwards.

" Let the huntsman try all around, and let him be perfectly satisfied that the fox is not gone on before the earth be tried. A fox sometimes runs over an earth, and does not go into it; he sometimes goes in and does not stay; he may find it too hot, or may not like the company he meets with there.

" Huntsmen, when they get near the fox, will sometimes put a hound in to draw him; this is, however, a cruel operation, and seldom answers any other purpose than to occasion the dog a bad bite, the fox's head generally being towards him: besides, a few minutes' digging will make it unnecessary.

" If foxes be bred in an earth which is unsafe, *stink* them out; *that*, or indeed a disturbance at the mouth of the hole, will make the old one carry them off to another place."

THE DALMATIAN, OR COACH DOG

Is the most inoffensive of the canine race, and is remarkable for its beauty and singular appearance; its colour being white and profusely marked with round black spots. It was thought to be of Danish extraction; but Pennant asserts that it came from Dalmatia, near the Venetian gulf. It is at present very common in England, and is generally reserved to attend upon carriages and horses when they are called into use, when he appears highly delighted and happy.

THE KENNEL.

WHERE a pack of hounds is extensive, it is absolutely necessary to have a kennel for them; they thrive no where else, and are rendered unfit for field sports, if allowed to run loose and take shelter when they please in out-houses or stables.

The situation of the kennel should be at a convenient distance from the master's house, so that he can either see the necessary operations performed from his room window, or walk thither without inconvenience at an early hour. There is an old adage, "that the master's eye makes the horse fat;" and it is even so with the kennel, where cleanliness is equally as essential as food.

Dogs are usually very clean animals, therefore it is absolutely necessary that the kennel should be regularly cleansed, to preserve the health and strength of the hounds. Fresh straw should be frequently administered; for mange is a disease to which dogs are very subject, to which nothing so soon contributes as poverty and filth conjoined. They, however, if well taken care of, seldom stale or dung where they must lie.

The situation of the kennel is thus described by Somerville:—

> "Upon some little eminence erect,
> And fronting to the ruddy dawn; its courts
> On either hand wide op'ning to receive
> The sun's all cheering beams, when mild he shines,
> And gilds the mountain tops."

The plan adopted by Mr. Beckford for the service of the hounds, is this:—

"Two kennels are absolutely necessary to the well-

being of the hounds: when there is but one, it is seldom sweet; and when cleaned out, the hounds, particularly in winter, suffer both while it is cleaning and as long as it remains wet afterwards. To be more clearly understood, I shall call one of these the *hunting-kennel*, by which I mean that kennel into which the hounds are draughted which are to hunt the next day. Used always to the same kennel, they will be draughted with little trouble; they will answer to their names more readily, and you may count your hounds into the kennel with as much ease as a shepherd counts his sheep out of the fold.

"When the feeder first comes to the kennel in the morning, he should let out the hounds into the outer court, at the same time opening the door of the hunting kennel, lest want of rest or bad weather should incline them to go into it. The lodging-room should then be cleaned out, the doors and windows of it opened, the litter shaken up, and the whole kennel made sweet and clean before the hounds return to it again. The great court and the other kennels are not less to be attended to, nor should any omission that is hurtful to the hounds be passed over in silence.

"The floor of each lodging-room should be bricked and sloped on both sides to run to the centre, with a gutter left to carry off the water, that when they are washed they may soon be dry.

"If water should stand through any fault in the floor, it should be carefully mopped up, for as warmth is in the greatest degree necessary to hounds after work, so damps are equally prejudicial.

"It is necessary that a vigilant and attentive person should superintend all this, and who so fit as the master? for if he is inattentive or careless, it cannot be wondered that the servant should practice a similar system.

" Contrary to the usual practice in building kennels, there should be three doors—two in the front, and one in the back; the last to have a latticed window in it, with a wooden shutter, which is constantly to be kept closed when the hounds are in, except in summer, when it should be left open all the day. This door answers two very necessary purposes; it gives an opportunity of carrying out the straw when the lodging-room is cleaned; and as it is opposite to the window, will be the means to let in a thorough air, which will greatly contribute to the keeping of it sweet and wholesome. The other doors will be of use in drying the room when the hounds are out, and as one is to be kept shut, and the other hooked back, (allowing just room for a dog to pass,) they are not liable to any obstruction. The great window in the centre should have a folding shutter; half, or the whole of which, may be shut at nights, according to the weather; and the kennels by that means may be kept warm or cool.

" Between the two kennels may be situated the feeding-yard and the boiling-house: there should also be two lesser kennels—one for hounds that are sick, and consequently draughted from the pack, the other, for bitches in heat.

" These kennels must be surrounded by a grass court, and if a brook runs near at hand it will be better. The gallows on which the flesh is hung should have a thatched roof and a circular board round the centre of it; this will in a measure prevent vermin from climbing up."

Mr. Beckford had a small hay-rick in his grass court; against this the hounds were frequently seen rubbing themselves, and he thought it tended greatly to clean and improve the look of their coats. In

summer it served as well as the trees to shade the dog from the sun's heat. Ticks will frequently be found on the walls of the kennels; in that case they must be washed away, and if they persist in returning, a little whitewash will remove them. In erecting a kennel, as with a stable, the soil should be chosen particularly dry. Hounds will suffer equally with horses from the effects of damp.

THE FOOD.

Dogs, in their natural state, are carnivorous animals; but domesticated and trained for the uses of man, they must be fed according to the purposes to which they are put, and the exercise they are to undergo; for on this depends their health, condition, and comfort. They are as much liable to disease from over-feeding as from poverty.

Every species of animal substance, whether fresh or putrid, is alike to dogs, except that of a hawk, goose, and crow; and also the flesh of his own race, from which they shrink with apparent disgust; and cook this last in whatever way you will, it is impossible to deceive them.

Dogs, generally, are not averse to herbs or vegetables, and these have conduced greatly to their benefit; much meat, and especially when given raw, where little exercise is called for, produces the distemper and many other malignant disorders. Bones of every description, except those of fish, should be given to dogs, as the stomach receives great benefit from their action on it. Horse-flesh is very nutritious when they are in regular exercise. Paunches, tripe,

or sheep's head, makes good food for them at all times, especially when potatoes or biscuits are added; the whole being mixed with the liquor in which the meat is boiled.

Animal food should never be used more than once a day; and the liquor of salt meat should never be given to a dog, as it will engender mange. Potatoes and skim or butter milk have been found sufficiently conducive to a dog's health and strength without the aid of animal food; indeed, many say, that "parsnips, carrots, cabbages, and, indeed, all vegetable matter, will feed dogs sufficiently well for the purposes of existence."

Where kennels are large during the hunting season, dogs have been found to thrive well on meal and milk; wheat, however, is preferable to barley or oats in this case; the two last named articles produce a heated skin, when mange ensues.

Next to horse-flesh, dogs most eagerly devour fowls' entrails. Greaves, softened and mixed with potatoes, are famous food for dogs.

No dogs should be wholly fed on meat; and flesh of every description should be parboiled, at the very least, before it is given to them.

In cases of sickness and languor, it frequently happens that no better remedy can be given a dog than change of food; viz., from meat to vegetable, or vice versa.

THE DISEASES OF THE DOG.

At the head of all diseases to which the dog is liable, as it is the most formidable, stands—

Hydrophobia,

Which name it acquires from its most distinguishing feature, *the fear or dread of water;* to which element, not only the dog, but the human being when attacked, exhibits the greatest abhorrence.

There are some, however, who insist that the disease is improperly named, asserting that dogs do not always fly from water; to this it may be replied, that there are several sorts of madness, differing materially in their intensity and danger; but in the first stage of those symptoms, which are termed *rabid,* dogs never drink, and in the course of their running, although they may chance to cross a brook or a gutter in which there is water, they never attempt to put their mouth to it, as they are totally incapacitated from swallowing any of it.

The symptoms of hydrophobia is melancholy, and an occasional loathing of food: the dog will leave home for some time and return again; his eyes become dull, and his mouth foul; a total loss of appetite soon follows; he manifests a disposition to quarrel; he runs at every thing; and betrays no signs of fear when beaten; gradually the eyes become fiery red and staring, the breath is strong, and the voice harsh; presently he will foam at the mouth, and then it is necessary to destroy him, as every animal that comes in his way is subject to be bitten by him.

A rabid dog is universally shunned by his own species; and even whelps have been known to avoid their mother when affected with hydrophobia.

As no stated period can be given for this malady making its appearance, all animals supposed to be bitten by a mad dog should be immediately destroyed,

most of the remedies that are prescribed being fallacious: never attempt to hang a dog in this state of the disease, as serious consequences may result from such a proceeding; the most speedy and effectual method of destruction is to shoot him.

We will now refer to the several sorts of madness peculiar to the canine race; the most dangerous of which is, *Rabies;* this is attended with hot and fiery symptoms, when the dog sets off running in one straight line if possible, regardless of all minor obstacles, and biting every living creature that presents itself in the way: one certain symptom of this malady is, that every dog, be he ever so courageous, will avoid coming in contact with one that is mad; and being attacked, will howl, and instead of attempting to retaliate, will make every effort to disengage itself.

The Dumb Madness, lies principally in the blood, and causes great irritation in the throat: the dog will not feed, and keeps his mouth wide open, as if he were choking. In this case, the following dose may be administered:—

Juice of Black Hellebore	- 4 ounces.
Juice of Spatula Putrida	- 4 ounces.
Rue - - - - -	- 4 ounces.

Strain these well, and add:—

Unprepared Scammony -	- 2 drachms.

This must be forced down the throat, and the dog held in such a position as to prevent his throwing up the medicine: this must be followed by bleeding of the veins of the gums.

Falling Madness lies in the head, and has a semblance to fits, for which it may easily be mistaken; the animal reels and falls down. Try in this case —

Juice of Briony - - - 4 ounces.
Juice of Peony - - - 4 ounces.
Staves-acre, (powdered) - - 4 drachms.

Mixed, and given through a drenching horn: bleeding is necessary: the veins that descend to the shoulder will be the proper place for this operation.

Lank Madness, is generally esteemed incurable, and derives its name from the animal's pining away: if any thing is tried in this case, it may be as follows:—

Julap - - - - - 15 grains.
Calomel - - - - 3 grains.

And on the next day, give—

Linseed Oil - - - two tablespoonsful.

This is to be frequently repeated.

Sleeping Madness, derives its name from the sluggish appearance of the dog, and is supposed to proceed from worms; which, by creating corrupted humours in the stomach, drive the fumes into the head. The following is recommended as effective:—

Juice of Wormwood - - 6 ounces.
Powder of Hartshorn, (burnt) - 2 ounces.
Agaric - - - - 2 drachms.

Mix with a little white wine, and administered through a drenching horn.

Rheumatic, or Slavering Madness, swells the dog's head; the eyes appear yellow, and slaver drips constantly from the mouth. Try—

Powder of the roots of polypody of
the oak - - - - 4 ounces.
Juice of Fennel root - - 6 ounces.
Root of Misletoe - - - 6 ounces.
Juice of Ivy - - - - 4 ounces.

These must be boiled together, and the liquor given to the dog as hot as he can drink it.

Thus, some assert that there are many varieties of

this disease; others again allow of only two varieties, the raging and the dumb madness; and a third party will admit of no distinctions; and, indeed, if we reflect on the great injury that has at times been done by the mad dog, good sense will dictate that as soon as the symptoms are confirmed, the surest and safest method is to destroy the animal, and the mischief can extend no further.

The best preventative against this disease, is plenty of water, with occasionally a dose of sulphur; where the packs of hounds are numerous, all suspected dogs should be immediately detached from the kennel until satisfactorily proved

It may not be amiss to say a few words in this place on hydrophobia when it attacks the human being.

Of late years, numerous instances have occurred of a cure for this terrible malady.

Bleeding has been found efficacious in many instances; but this must be continued till fainting succeeds; and if the first operation has not proved beneficial, bleed again: some have treated immediately after this with mercury and opium, but cases have occurred where these last were found unnecessary.

A gentleman was bitten by a dog affected with hydrophobia, and the animal died in less than twenty-four hours afterwards; muriatic acid was applied to the bite, which was a very extensive one: decomposition of the surface of the wound followed the application of this mineral acid, and about ten minutes after its application a little diluted alkaline was used to neutralise its effects and stop its action. A fortnight elapsed and the wound was healed, and no bad result accrued: this gentleman invariably afterwards carried on his person a bottle of the acid, and on another occasion, observing a dog bite both a horse and a pig,

he applied it to the wound of the horse which remained perfectly unaffected, while the pig died of hydrophobia twelve days after it was bitten.

Suffocation by water has been said to obviate the infection; but the remedy is almost as bad as the disease, and few would submit to the experiment.

In Germany large doses of vinegar is esteemed an antidote to hydrophobia.

A dog may easily be detected when mad by the tone of his voice, which is a characteristic noise between a bark and a howl, but approaching nearer to the latter.

The following observations by a veterinary surgeon of this day may be serviceable: they appeared in the "Evening Sun," of 1842:—

"Mr. Editor,—The case of hydrophobia reported in the papers a few days since, induces me, with your permission, to offer for the good of the public, the following observations on the disease, and the only means we are acquainted with to prevent it:—

"In the human being it is called hydrophobia; in the dog, and other animals, rabies. We are unacquainted with the nature of the poison, but it differs from all other poisons by remaining apparently in a dormant state for weeks, or even months, and it is not absorbed into the system for some time after the bite. No remedy is known for the disease when once it is developed. None of the nostrums which are said to be cures, can be relied upon. The cause of the disease is equally unknown. Some have attributed it to the heat of the weather—'the dog days;' others to want of water, or ill usage, but we have no proof of it. The present summer is the hottest we have known for many years, and I have not heard of any

case in the metropolis till the one above alluded to. In many hot climates the disease is unknown, and it has raged among us in the coldest weather.

" In 1838, I had no less than forty-eight cases under treatment, this year I have not had one.

" My predecessors, Messrs. Blaine and Youatt, as well as myself, have been bitten by rabid dogs, and we are still alive; and we have operated on some hundreds of human beings who have been bitten by rabid animals, and in no case has there been loss of life. The preventative is as follows :—

" The person bitten should, as soon as possible, thoroughly wash and cleanse the bitten part, not suck the poison from the wound, as is too commonly done, for inoculation may take place by an abrasion on the lip. If the wound be superficial and ragged, let the edges be removed with a pair of scissors, and then apply freely to every part the nitrate of silver, commonly called lunar caustic, and which may be had in any druggist's shop. If the wound be a punctured one, as in some cases it is, from the tusk of the animal going deep into the flesh, the stick of caustic must be carefully pointed that it may reach the bottom; if necessary, the wound should be enlarged, care being taken in the use of the knife, or the poison may be carried by it over the fresh surface. The nitrate of silver completely destroys the surface of the wound, and neutralises the poison, which comes away with the destroyed surface without the absorbents acting upon it, and if freely applied to the part affected, the patient may feel himself perfectly safe. I do not recommend the application of a poultice after the operation, but let the wound be exposed to the atmosphere, and should any inflammation ensue, it may be relieved by dressings of olive oil. Believing that some lives may

be saved by communicating this information through your valuable columns.

" I remain,
" Your obedient servant,
" J. A. AINSLIE.'

Mr. Beckford recommends the following remedy for hounds suspected of hydrophobia: after removing them from the pack, on the slightest symptoms, try:—

On the first day—
Turbith's Mineral - - - 8 grains.
On the second day—
Turbith's Mineral - - - 16 grains.
And on the third day—
Turbith's Mineral - - - 32 grains.

This is administered best in balls made of butter and flour: the dog should be bled the day previous to giving the first dose: if not looked to, the dog may throw up the ball; give it always on an empty stomach, and after the third day, his usual feeding may be restored.

In hydrophobia, a dog loses all recollection of both persons and places.

THE DISTEMPER

Is another fatal disease to which the dog is subject; and, at certain seasons, is very prevalent; while at other times but few cases of it occur. It is found more frequently among young dogs and puppies, than with such as have arrived at their full growth and strength.

Respecting this disease, almost every person who

has a dog entertains a different opinion, and each one has his *infallible remedy*, despising the prescriptions of another as absurd; and this in a great measure is the result of the many different symptoms under which the distemper appears, when the treatment must vary accordingly. At one time it is present with excessive laxity of the bowels, another year it may be putrid and malignant, and at times it shows itself with fits. Purgation is the usual attendant of this malady in summer, and fits in the winter; but few cases are alike, and Mr. Blaine observes, that—

"It is to the immense varieties of the complaint that we must attribute the endless number of remedies continually prescribed for it; every one of which, from being occasionally beneficial, becomes, in the mind of the person using it, infallible. Distemper, therefore, is seldom spoken of among a number of sportsmen, but every one of them knows of a *certain cure, one that has never failed with him.* The varieties in the complaint are so numerous, that hardly any two cases can be treated alike; consequently no one remedy can be applicable to every case; for however efficacious it may prove in a number of instances, a judicious attention must be paid to the varying symptoms."

In most cases there is generally a greater obstruction of the bowels than otherwise, and the first effort must be to relieve this by clysters. It attacks indiscriminately every dog, and none have been able yet to account satisfactorily for its appearance: at all times it seems to be a disease very obnoxious to the animal, as he displays many efforts as if attempting to throw it off him. In cases of dissection, the throat has appeared considerably swollen, and the stomach slime and filth; the mucous or petuitary membrane-

lining, the cavity of the nostrils, and top of the throat, has been inflamed, and a state of fever is visible throughout the frame

Its first symptoms are moisture about the eyes, and general dullness; a slight cough is present, and an inclination to vomit; the cough soon becomes dry and husky, and a frequent reaching and throwing up succeeds: a dog quickly loses flesh in this disease. A few of the remedies usually resorted to, are as follows: take—

Calomel - - - - -	10 grains.
Tartar Emetic - - -	20 grains.

These are made into a large bolus and divided into twelve parts, one of which is given every morning fasting.

Some speak very favourably of Blaine's medicinal powders, while others again have asserted their effect was ruinous; but the reason has been already stated.

Common salt made into a ball with butter causes them to vomit; after which give the dog a little sulphur, and as much powder of antimony as will cover a sixpence; this may be mixed with his food.

Dr. Dickson says, that "In the removal of this complaint, many different points and circumstances of the disease are to be well attended to and considered: when in cases where the bowels are unaffected, and quite free from any sort of disturbance, and at the very onset of the disease, great benefit may often be derived from such remedies as these directed below:—

Antimonial Powder - -	3 or 4 grains.
Compd. powder of Controjerva	10 grains.

Mix them into a powder, which may be given in the evening, in a little fresh butter, or some such substance, being repeated as there may be a necessity.

"Or, at the same incipient stage of the disorder, the discharge of the contents of the stomach may be occasionally produced with great benefit by such means as these:—

Solution of tartarized Antimony 6 drachms.
Wine of Ipecacuhana - - 3 drachms.

Mix, and make them into an emetic drink, which may be given every two or three days in a little oat-meal gruel for two or three times, if the strength of the dog does not sink too much.

"A strong solution of common salt in warm water in the proportion of from one large table-spoonful, or one and a half, to from three to five of the water, as the strength and size of the dog may be, will often answer the purpose.

"The bowels of the dog should at the same time be kept gently open; but where there is an excess of looseness, it must be instantly restrained by such means as these:—

Compound powder of Chalk - 3 drachms.
Ipecacuanha - - - - 1 drachm.
Kino, in fine powder, - - ½ a drachm.

Syrup sufficient to make them into two balls, which may be given and repeated as there may be occasion; mild and astringent food being had recourse to at the same time, such as flour or rice boiled in milk.

"Sometimes, in these early stages, submuriate of mercury in small doses, and a mixture of Turbith's mineral, in the proportion of four or five grains, and one of tartarized antimony, are found very serviceable; a little blood being previously let where necessary.

"It is necessary to let dogs have plenty of proper good food at all times in the course of the disease, except in the very early stage of its attack, while the active inflammation is present.

" Besides these means, the distemper powder, so much celebrated and advised for this use, may be found of much advantage in some cases at the onset of the disease, and is to be had with proper directions for giving it in most places.

" Where the dogs have much tightness and stoppage in the nasal parts, common tar and butter melted together, and put on and rubbed well upon the higher portions of them, are often of benefit in relieving them: and in cases of much distress and confusion, with stupor in the head, utility is sometimes produced by the application of a blister or blistering ointment on the top part of it; but little service is produced from the insertion of setons in most of these cases.

" After the first stages of the disease are over, recourse must be had to the more tonic and strengthening sort of remedies, such as the following :—

Cinchona quilled bark, in fine powder, - - - half an ounce.
Cascorilla bark, in powder, 1 drachm.
Camomile Flowers, in powder, 1½ drachms.

Make them into a powder, which may be given in a little broth two or three times in the day if necessary.

" The diet of the dog should now be gradually rendered more full, with increasing larger proportions of animal matter, and a plentiful supply of drink.

" In a case where I had a dog, which I much prized, as soon as he was affected with the first symptom of the distemper, when the husky cough and slimy discharge from the nose and mouth had already begun, I bled him in the neck till he fainted through loss of blood: on the evening of the same day, I administered—

Tartar Emetic - - - 10 grains,

doubled between some bread and butter: this dose I repeated four successive mornings; after which all virulent symptoms had disappeared, and in less than ten days after the bleeding, the dog was perfectly restored to health.

"At all times cleanliness is very essential in this disease, as also fresh air; and no dog should be allowed to lie or sleep near a fire while affected with this disorder.

"Dogs fed on potatoes and biscuit suffer much less in cases of distemper, than such as live on high food, as raw meat, carrion, &c.

"No flesh should be given during the progress of the disease."

Mange

Is generally the result of neglect, although it will occasionally be present among the cleanest dogs, and in the best of kennels; with some it is acquired by infection, with others it is the sequent of a morbid action of the constitution.

Dogs confined too long in one small kennel, will engender mange, owing to the acrid effluvia of their transpiration. It is as common to dogs well fed as to such as are in ill-condition; and nothing will sooner produce the disorder than feeding on salt provisions, or drinking stale and dirty water.

Mange has been divided into four different kinds: the common, the red, the spongy, and the surfeit; of these the common mange is the most infectious, but the red mange is the most obstinate to cure.

Common mange has been cured by brimstone alone; this has been given regularly every day in the food;

sometimes oil of turpentine has been mixed with it, and then it may be used as an outward application.

The number of prescriptions recommended in cases of mange are almost extremely numerous, and would occupy pages: I shall but mention a few.

In obstinate cases, take—

Tobacco - - - -	half an ounce.
White Hellebore - - -	half an ounce.
Sulphur - - - -	4 ounces.
Aloes - - - -	2 drachms.
Lard - - - - -	6 ounces.

This must be well mixed, and then rubbed well into the skin once every day for eight or ten days.

Or—

Decoction of Tobacco - -	3 ounces.
Decoction of White Hellebore	3 ounces.
Corrosive Sublimate - -	5 grains.
Aloes - - - -	2 drachms.

The three first are sufficient for the disease, but the aloes prevents the dog licking off the wash: some strongly recommend—

Fox-glove leaves - - -	2 ounces.

These are put into a jug, over which is poured a quart of boiling water; when cold the dog is washed in the decoction, and a few washings generally will effect a cure.

For the red mange, which is known by the colour of the skin, and the apparent irritability of the dog, the following is used:—

Mercurial Ointment - -	1 ounce.
Aloes - - - - -	2 drachms.
Lard - - - - -	6 ounces.

The animal is very liable to catch cold from the application of this ointment, but from the nature of the disease, we are obliged to resort to powerful remedies;

internal remedies are also necessary to keep the bowels in a proper state: in obstinate cases, use—

Oil of Vitriol - - -	8 drops.
Flour of Sulphur - - -	4 drachms.
Conserve of Roses - -	1 ounce.

This must be divided into ten doses, and one given in a ball every morning. Red mange frequently alters the colour of the hair, and has even been known to fall away altogether and leave the body bare. The spongy and surfeit mange will bear the same treatment as the red: with surfeit mange, bleeding and opening medicines are particularly recommended. In slight cases of mange, much benefit is derived from washing the dogs in lime water; tan-yards abound with lime-pits, and I have frequently known dogs perfectly cured by two or three dips in these.

When ointment is used, it is not sufficient to smear the hair; an hour, at least, is necessary to dress a dog properly, and every thing should be well rubbed into the skin.

Worms

Are very peculiar to dogs, and occasion them much uneasiness, and puppies frequently die of them: purges are very commonly employed in every case; mercurials in small doses, pewter, tin, sulphur, bitters, &c., have all been tried. Epsom salts are very efficacious, and quickly expel worms; but, unfortunately, they quickly return: a medicine very much recommended is—

Powdered Julap - - -	20 grains
Calomel - - - -	3 grains.
Golden Sulphur of Antimony -	4 grains.

These are mixed with a little butter, and given every other morning, for a few times.

Canker in the Ear,

Is frequently among dogs that are over-fed; the humours fly to the ear, and by incessant scratching, a scab is soon produced.

In the early stages, use—

Sugar of Lead - - -	half a drachm.
Rain Water - - - -	4 ounces.

When ulceration ensues, apply—

White Vitriol - - -	16 grains,

mixed with a decoction of oak-bark.

Exercise and purgatives are essentially necessary in cases of ulceration; and all dogs with long hair are more subject to this disease than any others.

A decoction of tobacco-water is frequently very serviceable.

Sore Feet and Ears,

When brought on by thorns, &c. from the hedges, are easily cured with salt and vinegar: tar and lard is preferred by some.

Canker in the Lips

Is successfully treated with alum-water.

Fits.

Many dogs are subject both to convulsive and spasmodic fits, but the causes vary: with young dogs or puppies they may arise from teething, or worms; and not unfrequently they are the forerunners of the distemper.

Worms are a very fertile source, and will produce fits more generally than any thing else, especially when they are very troublesome; these fits are usually of the spasmodic kind, and may be removed by plunging the animal in cold water; after which, administer the following:—

Opium - - - - -	4 grains.
Castor, in powder - - -	18 grains.
Sulphate of Zinc - - -	5 grains.

These must be mixed into a ball with balsam of peru, and divided into two doses; one of which may be given after the immersion, and the second the next day.

Dogs have been known to fall into fits from the effects of fear, or irritation. Want of exercise is likewise a fruitful cause; in such case the remedy is evident. Costiveness will produce them; when an active purge will be effective: indeed, in most instances, whether costiveness exists or not, this remedy is recommended.

When the distemper is accompanied with fits, great danger is present, and oftentimes the disease proves fatal. Strong emetics may be tried. No valuable bitch should be allowed to rear or suckle more than two puppies at a time: when she is over-burdened with them, convulsive fits will often be brought on, and at last end fatally.

Diseases of the Eye.

In most diseases of the eye, especially when the inflammation is simple, poppy-head fomentations or goulard washes will effect a cure, especially when the injuries have been produced by scratches, blows, &c.

The distemper will often leave an apparent ulceration of the cornea. If the above washes produce no effect, try a mild vitriolic one, and by degrees the eye will become clear and transparent again.

Try—

Sugar of Lead - - -	24 grains.
Rose Water - - - -	6 ounces.
White Vitriol - - -	8 to 10 grains.

This will be useful if the eye is very red and inflamed within the eyelids, and when they throw out much water.

When dogs become aged, cataract will frequently exist in both eyes. Young dogs are equally subject to it, but in this case as it only is found in one of the eyes, the cause may be referred to an injury: the most general remedy is a solution of white vitriol in water, made rather strong, and applied with a sponge or fine linen twice or thrice a day.

When injuries to the eye leave a bluish cast in it, the following is recommended :—

Calomel - - - -	1 drachm.
Sugar of Lead - - -	1 scruple.

A small quantity of this powder must be sprinkled into the eye occasionally during the day.

Coughs

Are very common among dogs, and may be attributed to various causes. That which accompanies distemper has been already discussed. Worms will often be attended by a short cough, not unfrequently producing nausea, and the animal appears every way out of condition; in this case the worms which produce the disease must be first eradicated, for which refer to the treatment under that head.

Cold frequently produces a cough, which, when it has continued any length of time, it will be necessary to treat very carefully. After bleeding, administer two or three grains of tartar emetic, or common salt, in the proportion of a teaspoonful to a dessert-spoonful, according as the dog is large or small.

As dogs get old a cough is contracted by degrees, which becomes very hollow, and finally degenerates into

Asthma,

Which is not readily cured, unless speedy means be resorted to, and the disease is in its earliest stages: it assumes various forms, at times being accompanied with great emaciation, while in other cases it is found with an accumulation of fat.

In this last instance, over-feeding and want of regular exercise may be referred to as the main cause: this then is easily obviated by regularity in everything which tends to produce ease and health. Bleeding may give relief in the early stages, and the administration of mild purgatives.

In severe cases, the use of alteratives, with an occasional purgative, is recommended during the time that the dog is under a course of emetics. Calomel is often used, but it is both disagreeable and dangerous.

Try—

Fox-glove, (powdered) - -	half a grain.
Nitre - - - - -	3 grains.
Tartar Emetic - - -	a qr. of a gr.

It is to be remembered that no other medicine should be administered the same day with the nauseate.

In obstinate cases, balsamic gums are recommended as particularly efficacious.

Try—

Gum-ammonia - - -	4 grains,
Squills, (powdered) - -	half a grain,
Balsam of Peru - - -	3 grains,

made into a ball with honey.

A few drops of laudanum mixed in the alterative, relieves the cough when it has become very distressing.

Inflamed Lungs

Often proceed from coughs when they have been of long standing; this is manifest from the difficulty of breathing, the oppression apparent in the beating of the heart; which, however, is at the same time rather rapid than otherwise.

From six to ten balls, one of which is given every three hours, according to the size of the dog, may be made from the following:—

Nitre - - - - -	1 drachm.
Tartar Emetic - - -	4 grains.
Fox-glove. (powd.) - -	10 grains.

When the cough is violent, an ounce of oxymel is added, and a dessert-spoonful may be used every two hours.

Venemous Bites, &c.

Dogs in hunting are sometimes apt to be bitten by vipers; there are many prescriptions in use, but their effect is very uncertain: among the numerous ones that might be set down, I know of none so easily procured or so good as sweet oil; but it should be rubbed in very speedily, otherwise a tablespoonful should be poured down the animal's throat. Olive oil is preferable to any other, and Mr. Beckford speaks in the highest terms of it. The same remedy may be applied to the bite of the slow-worm, &c.

Poisons.

Dogs seldom touch any thing injurious, unless it be administered in their food, and of all poisons the most destructive is crow-fig. When it is discovered that the dog is suffering from the effects of poison, the most speedy vomits should be given.

Common salt will act as a powerful emetic when thrust down the throat of the animal. In cases of mercurial poisons, use—

Ipecacuanha - - -	2 scruples.
Liver of Sulphur - - -	2 scruples.

When the vomiting has ceased, give a dose of castor oil.

Dropsy.

This is a disease occasionally found among dogs, arising from various causes, and accompanied with various symptoms; at times showing itself early, at other times appearing only in its latest stage. Considerable thirst exists at first, gradual loss of appetite succeeds, and the immense pressure of the water on the membrane which separates the lungs and intestines, finally produces suffocation.

Dropsy is of two kinds, existing in the chest and in the belly, the latter being the most prevalent.

Dropsy of the chest is incurable, and may be distinguished from the other by the swollen appearance of that portion of the body in which it exists. The dog appears to suffer much pain when he attempts to lie down, being desirous at all times of elevating his head.

Dropsy of the belly, as well as dropsy of the chest, is not a primary disease, generally resulting from an unsound liver, neglected mange, and not unfrequently it has been known to follow the asthma.

Diuretics have been tried in all cases of dropsy, and have occasionally only proved successful.

Take—

Fox-glove, (powdered) - - 10 grains
Antimonial powder - - - 14 grains,

mixed, and divided into a dozen portions, one of which may be given every night and morning.

Take—

Fox-glove, (powdered) - - 9 grains,
Squills, (powdered) - - - 10 grains,
Cream of Tartar - - - 3 drachms.

mixed, and divided into ten or a dozen portions, and given twice a day.

Fox-glove has been known to fail in some cases. and Mr. Lawrence prescribes the following :—

Oxymel of Squills - - -	1 ounce,
Infusion of Tobacco, (made by pouring two ounces of hot water on a drachm of tobacco) - - - -	4 drachms,
Sweet spirit of Nitre - -	4 drachms,
Tincture of Opium - - -	½ a drachm,
Infusion of Camomile - -	2 ounces,

mixed, and then give a dessert-spoonful night and morning.

These are the most common remedies, although few dogs when once seized with dropsy are deemed curable.

The method of tapping a dog has been occasionally tried with success.

Rheumatism

Is brought on from the effects of cold or inflammation of the bowels; and to such an extent has this disease been known to exist, that the dog has been totally deprived of the use of his hinder legs and quarters, which has been succeeded by paralysis.

When inflammation of the bowels exist, with extreme costiveness, copious bleeding is necessary; after which give—

Castor Oil - - - - 1 ounce.

Occasional bathing in warm water should also be tried, and if this does not prove successful, try clysters composed of castor oil and mutton broth; this

should be repeated till the bowels are opened. In extreme cases recourse must be had to a mustard poultice or oil of turpentine, which is to be rubbed into the parts affected.

When the symptoms are only slight, the bathing in warm water has been found sufficient.

When paralysis to a great extent exists, the effects of electricity only have produced any satisfactory results; while, on the other hand, mercurial ointments have been very efficacious; but the use of these are by no means desirable, as considerable danger attends their application.

Gravel.

Dogs are subject to both gravel and stone; the most approved remedy for which is—

Oil of Turpentine - - - 15 drops,
Spirits of Nitre - - - 30 drops,

mixed.

This dose must be increased in due proportion to the size of the dog: a few drops of laudanum may be added when much pain exists.

Piles

Are found more frequently with a bitch than with a dog, generally appearing after confinement; any thing tending to heat the blood, is a very fruitful cause of this disease.

Powdered Nitre - - - ½ a drachm,
Milk of Sulphur - - - 3 drachms,

mixed, and divided into ten or fifteen portions, accord-

ing to the size of the dog; one of which should be given every morning.

An ointment composed as follows:—

Tar - - - - -	half a drachm.
Sugar of Lead - - -	5 grains.
Lard - - - -	3 drachms.

This should be gently smeared upon the part affected three or four times a-day.

Another ointment, not generally known, but very efficacious, and which has been often successfully tried by the writer of this work, and called "The poor Man's Friend," prepared by Messrs. Beach and Barnicott, and sold by most chemists in the united kingdom.

Spasm

Will arise from various causes, the best remedy for which is warmth; laudanum is recommended in various proportions, according to the size of the dog: clysters composed of laudanum are particularly effective.

Wounds, Sprains, &c.

Instinct teaches the dog to lick any sore or wound within his reach; and it has been generally found that they heal more readily from such a process than from the best application that the art of man could invent. The reason is evident, the tongue removes all dirt that may adhere to the edges or orifice of the fractured flesh, which is the surest way to obtain a speedy cure.

Gun-shot wounds may be treated with the following ointment :—

Goose Grease, Turpentine, and Spirits of Wine—of each an equal quantity.

These ingredients must be melted over a slow fire, and when strained, applied to the wound.

This will be found a useful ointment for most wounds; but should they be very extensive, sticking-plaster should be applied in preference to using a needle and thread; this last method is very apt to produce ulceration.

The cautery, or lunar caustic, should be applied to wounds occasioned by the bite of another dog if he have any symptoms of hydrophobia.

For sprains generally, the following embrocation will be found efficient :—one part of turpentine to two of spirits of wine.

Dogs meet with fractures far less frequently than any other animal; yet such as are allowed to run about stables, follow coaches, &c. are liable to accidents; huntsmen will also, unavoidably at times, ride over hounds. Fractures of the shoulder and thigh should be treated as follows :—

Apply a plaster of pitch, spread on stiff leather, upon the outer portion of the leg, then attach a board over the elongated ends of the leather, the whole being kept moderately firm by means of a bandage.

Sulliman, in his " American Journal," relates the following :—

" I have a favourite spaniel dog, of the King Charles' breed, thirteen years old, and as he cannot relate a tale of woe of himself, I propose to do so for him, in as few words as possible. In June last, in a small steel trap set in the cellar, for the purpose of taking rats, he was accidentally caught at about midway

of the tongue, and in this situation he remained about three fourths of an hour. On examination, after he was extricated, the tongue was found started out of its natural position in the mouth some four inches. Every thing was done to relieve his sufferings, and in the hopes that the tongue would adhere to its former position in the mouth, but the tongue being much mutilated, after a lapse of forty-eight hours, the weather being warm, it became perfectly black; at this time, the poor old dog exhibited a desire to leave his kennel, which he was permitted to do, and he went direct for the ocean, where he cooled the fever of his blood by a swim; he thence went away, and was absent alone about half an hour, when he returned to his kennel perfectly tongueless, having, as it was supposed, torn out his own tongue by putting his paws upon it as he had before been seen to do. He was fed during the time upon boiled rice and soup, and ate the usual quantity, on his head being held up, so that the food would run down his throat. Necessity is said to be the mother of invention, which seems to have been verified in this case, as the old favourite now feeds himself as well as ever he did upon every variety of food, drinks as well as ever, although after the manner of a pig, by running his nose more than usual into the water; and what seems still more remarkable, he barks with the same distinctness as usual on the least intrusion on his premises in the night time, as he did before the loss of his tongue, and in all respects seems as well as he was previous to the accident."

Brown, in his "Anecdotes of Dogs," gives an example of the instinctive dread these animals have of hydrophobia.—

"A man who used to come every day to the celebrated Dr. James' house, was so beloved by three

cocker-spaniels which he kept, that they never failed to jump into his lap and caress him the whole time he stayed. It happened that this man was bitten by a mad dog, and the very first night he came under the influence of the distemper, they all ran away from him to the very top of the garret stairs, barking and howling, and showing signs of distress and consternation. The man was cured, but the dogs were not reconciled to him for three years afterwards."

The same author gives the following interesting (though very singular) account of a terrier.

" At Dunrobin Castle, in Sutherlandshire, the northern seat of the Duke of Sutherland, there was in May, 1820, to be seen a terrier bitch nursing a brood of ducklings. She had had a litter of whelps a few weeks before, which were taken from her and drowned. The unfortunate mother was quite disconsolate till she perceived the brood of ducklings, which she immediately seized, and carried off to her lair, where she retained them, following them out and in with the greatest attention, and nursing them, after her own fashion, with the most affectionate anxiety. When the ducklings, following their natural instinct, went into the water, their foster-mother exhibited the utmost alarm, and as soon as they returned to land, she snatched them up in her mouth and ran home with them. What adds to the singularity of the circumstance is, that the same animal when deprived of a litter of puppies the following year, seized two cock chickens, which she reared with the like care she bestowed on her former family. When the young cocks began to try their voices, their foster-mother was as much annoyed as she formerly seemed to be by the swimming of the ducks, and never failed to repress their attempts at crowing.

The accompanying will illustrate the fidelity of these animals :—

" Lennard Solikoffer, a Swiss nobleman, who, on the conclusion of the Swiss union, went to Paris as ambassador, had a large dog, which, on his departure, he ordered to be shut up for eight days. This was done, yet at the end of that period, the dog traced his way to the French capital, four hundred miles, and on the day of audience, rushed in all covered with mud, and leaped up mad for joy upon his master. In the family castle of Thuringia there is a painting of the story."

SPORTING IN FORMER DAYS.

Those fierce sportsmen, the Normans, were almost madly attached to the pursuit of the stag, as clearly appears by the fiendish cruelty of the statutory enactments of William the First, for the protection of these animals. But in hunting the stag they made use of the spear and the bow, as well as the dog: it is evident that much of the Norman mode of pursuit was retained in the days of Elizabeth. The Normans brought into the country the noble talbot, from which our varieties of the hound have been derived; and this dog was used for the purpose of rousing game, while the ambushed sportsmen discharged their arrows as it passed; if it were wounded, the dog pursued it; and such was the acuteness of its smell, that he was able to follow his game through every soil, every labyrinth, and all its intricacies. If, however, the deer was only slightly hurt, the chase was long; it ended, in fact, with the close of the day; for as the talbot

was slow in pursuit, he could not, like the modern fox-hound, run up to his game, yet, from the extraordinary acuteness of his olfactory organs, he could always trace it unerringly, whatever distance it might be ahead. In 1124, Richard the First chased a hart from Sherwood Forest to Barnsdale in Yorkshire, and there lost him; he therefore made proclamation at Tunhill, and various other places in the neighbourhood of Barnsdale, that no person shall chase, kill, or hunt the same deer, in order that he might return to his lair in the forest of Sherwood. Thus, in early times, when hounds from exhaustion being unable to continue the chase, proclamation was made in all towns and villages near which it was supposed the hart might remain, that no person might hunt or kill him, so that he might safely return to his forest; and the foresters were ordered to harbour the said hart, and by degrees bring him back to the forest; and the deer was ever after a 'hart royal proclaimed.'

DOG PHYSIOGNOMISTS.

Whenever speaking to a dog, whether encouragingly or reprovingly, the sportsman should endeavour to look what he means, and the dog will understand him. The dog will understand the look if he does not the words. The sportsman should never with a smile on his countenance punish a dog; nor commend him when he has done well but with an apparent hearty goodwill; the dog will then take interest in obeying him. Gamekeepers and dog-breakers are often odd fellows, and seldom natives of the place where they follow their avocation. Many of them are

particularly loquacious to the dogs: should one of these queer specimens jabber in a Cornish or a Yorkshire dialect to a dog trained on the Grampians, the dog will understand from his look whether he is pleased or offended, but nothing more. The dog has not the gift of tongues, but he is a Lavater in physiognomy.

The following instance of the fidelity and courage of a terrier occurred in Glasgow:—

"One evening, as a young gentleman of the name of Hardy was passing through St. Andrews Square, on his way home to his father's house in Charlotte Street, he was stopped opposite to the north-west corner of St. Andrews Church by a man armed with a large stick, who seized him by the breast, and striking him a violent blow on the head, desired him instantly to deliver his watch. As he was preparing to repeat the blow, a terrier belonging to Mr. Hardy, sprang at the ruffian and seized him by the throat, and his master at the same time giving him a violent push, he fell backwards and dropped his stick, which the other immediately seized and carried home. The terrier soon after followed him home, bearing in his teeth as a trophy of his courage nearly half the front of the man's waistcoat, in the lining of which half a guinea was found carefully sewed up. The waistcoat was of coarse woollen stuff, with a black stripe, much worn and tattered, and not at all corresponding with the elegance of the walking stick, which had a gilt head, and contained a handsome small sword."

The fidelity of dogs generally may be illustrated by the following:—

"In October, 1803, during the deluge with which the island of Madeira was visited, a remarkable circumstance happened near St. John's river. A maid-servant in flying from one of the fallen houses, dropped

an infant from her arms, which was supposed to have perished. Next day, however, it was found unhurt on a dry piece of ground along with a shock dog belonging to the same family. The dog was close by the child, and it is imagined that the child was kept alive by the warmth of the faithful animal's body."

"After the execution of Sabinus, the Roman general, who suffered death for his attachment to the family of Germanicus, his body was exposed to the public upon the precipice of the Germoniœ, as a warning to all who should dare to defend the fallen house. No relative had courage to approach the corpse; one friend only remained true—his faithful dog. For three days the animal continued to watch the body; his pathetic howlings awakened the sympathy of every heart. Food was brought to him, which he was kindly encouraged to eat, but on taking the bread, instead of obeying the impulse of hunger, he fondly laid it on his master's mouth, and renewed his lamentations.

Days thus passed, nor did he for a moment quit his charge: the body was at length thrown into the Tiber, and the generous and faithful creature, still unwilling that it should perish, leaped into the water after it, and clasping the corpse between his paws, vainly endeavoured to preserve it from sinking; and only ceased his endeavours with his last breath, having ultimately perished in the stream."

In the Sporting Magazine the following anecdote is told, which exhibits a rare, yet affecting occurrence, in exemplification of animal sympathy:—

"An ill-fated cat fell into the hands of some young ruffians, who commenced the first stage of cruelty, which often leads to great crimes, and to an ignominious end. The little wretches had passed from

cruelty to cruelty, alternately stoning their victim and dragging it through a dirty pool of water, then beating and bruising it, and menacing it with drowning. Bipeds passed by unheeding the animal's cries of distress, which were now nearly coming to a close with its life, when a feeling quadruped came forward to save it. A dog, having contemplated for some time this scene of inhumanity, and barked disapprobation, rushed forward on the young assassins, and driving them one by one furiously off the spot, sprang to the rescue of the bleeding animal, and withdrawing it from the deep ditch, bore it off in triumph to his quarters; there extending it upon the straw, and licking it all over, he recalled the vital spark, and then laying himself down upon it, restored it to some degree of ease from the warmth imparted to it.

"After this, the kind and feeling dog fetched provision to his sick charge, and the people of the house, inspired by the example of the minor animal, gave it warm milk. Day after day did the dog attend the sick object of his care, until it was perfectly recovered; and they are both to be seen at this day, after a long lapse of years, at the Talbot Inn, Liverpool."

"Many are still the deer forests of Scotland, but they are not what they were. Once a whole forest was dedicated to the services of the chase alone: you might have travelled from Banffshire to Ben Nevis without deviating from the region possessed by the noble Huntly. Sutherland, throughout the whole of its extent, was one prodigious forest, and so it still is, although the introduction of sheep-farming has made it lose its old pre-eminence. We need not mention more; the time has been, and it is not yet far distant, when a herd of deer was to be found on every mountain north of the Tay, and the slaughter at each

tinchel was as great as that of the dolorous hunt which caused the fight of Chevy Chase. Did we say *north of the Tay?* The time has been when a fairer forest than any in the rugged highlands grew on the banks of Ettrick and Yarrow, and 'down by Tiviotdale.' That forest has been sung by many a bard, and though now destroyed (all save a few old trees on the banks and scaurs of St. Mary's Lake, melancholy memorials of the rest!) will flourish in memory as long as the Scottish minstrelsy is sung, and the deeds which it celebrates remembered with affection and pride. Yes, the days have indeed altered since

> "King James and a' his companie,
> Rade down the Meggat glen;"

and the echoes of Loch Skene will never more be awakened by the baying of the hound and the merry blast of the horn!" *Sport. Mag.*

The dogs of Constantinople may be divided into two classes—the Frank and the Turkish dog. The first class is small, and only to be found in the streets of Pera, or harbouring about the doors of Frank houses and cafes. They appear to be nearly all akin, if not in the direct line, from the English pointer dog; and it has been supposed that some English travellers, who have visited Pera, have either lost their dogs or had them stole from them, and from these the present race has sprung; as certainly *they* have not been trained to the field, as I ascertained from several persons who had made trial of them. Some of these dogs appear to have a local habitation and a name, as they may frequently be seen sitting in the door-ways of Frank houses, to which they have—what is always denied to the Turkish dog—the privilege of *entree*. The greater part, however, like their Turkish brethren, are name-

less and houseless wanderers, living and sleeping entirely on the street, or among the ruins of some adjacent building. They are harmless, and do not bark or snap at the Frank as he passes; neither do the Franks beat or molest them in the smallest degree, but seem rather to regard them as unfortunate strangers in a foreign land; and if one of them should get assailed by a Turkish dog, woe to the assailant if a Frankish stick is near at hand!

The first thing that attracts a stranger on arriving at the Capital of the Turkish empire, is the immense number of dogs he meets lying in his way, some in the centre of the street, others right across the footpath, sound asleep, and perfectly unconscious that they have chosen the situation of all others that will subject them to most danger. In walking along a stick is absolutely necessary in order to make them get out of the way; and in many cases three or four good blows have to be administered in order to get the lazy cur to move. An Irishman, whose patience had been severely tried during the winter of 1838—9, used to remark, that "they were four-stroke-proof gentlemen: one blow on the head to awaken them; another on the legs to let them feel they were awake; a third on the face to make them get up; and a fourth behind to help them to run away."

If a stranger appears in the street in the Frank dress, (and the dogs know a stranger as well as the *prefet de la police de Paris*,) and the dog be not asleep, he instantly sets up a howl, which soon draws all the other dogs in the vicinity forth to join the chorus. Woe to the poor stranger who is annoyed in walking along the streets of a strange town with six or eight dogs at his heels, and as many standing on each side of him! his temper will be sadly put to the test. The

only remedy is to walk on, apparently unmindful of their attentions, but at the same time keeping a sharp eye upon their movements, until one of them, presuming upon his apparent negligence, more bold than the others, approaches within length of his stick; then let a blow be struck, quick and heavy, over his enterprising head: if well struck, a howl, such as must be heard to be understood, will follow from the sufferer; this will be caught up in chorus by all the others, and turning tail, the whole pack will each consult his own personal safety in a speedy retreat. If the blow is missed, or not dealt with stunning force, it had as well been left alone, as it will only increase their wrath and boldness.

Nothing will drive them away but the howl of pain of some of their companions, or some native, taking pity on the unfortunate Frank, calling out, "Huist! huist! huist!" These exclamations have some magical sound attached to them that I could not understand, as I never yet heard a Turk or Rajah use them but the dogs ran away.

As the stranger begins to know the town a little better, the dogs know him also; and if he is liberal in dealing out heavy blows when they are called for, and careful to let the dogs alone when they do not annoy him, he will soon be left in comparative tranquillity; but it is not an uncommon thing for him to have his temper so much ruffled, that he begins to beat every dog that comes within reach of his stick.

There was an Englishman, who, during the summer of 1838, adopted the resolution that whenever a dog barked at him to strike the next one he came to; and to this plan he stuck so close during his stay, that latterly the dogs gave him no annoyance, and the Turks called him "the dog bastinading Giaour."

To what particular race these street-dogs belong it would be difficult to say. They appear to be a mixture of a great many mongrel breeds, but comparatively few of them are what is called the pure Turkish dog. Among the street-dogs there are, no doubt, many of what is called the Turkish dog; an animal, though undescribed by naturalists, yet undoubtedly deserving of some attention. But the Turkish dog must be looked for in all its purity in the burial-grounds, where they bear a proportion of nine to one of the mixed breeds; while in the streets their proportion is not more than one in ten.

The street-dogs, or mixed breed, are of all shapes, sizes, and colours; some of them can only bark, others only howl, while there are again some who can both bark and howl. The pure Turkish dogs, on the contrary, are of one uniform shape, and generally at maturity of nearly one size. In form they are all like the strong thick-set Scottish sheep-dogs, remarkably strong in the legs, and very broad from ear to ear; in size they are rather larger than the shepherd's dog, and generally of a black, or brown and black colour; they cannot bark, but howl like a wolf; and, like the street-dogs, can only be put to flight by a smart hard blow—a slight rap is of no use; the blow must be struck with such force as to make the receiver eloquent; when he and his companions will take the hint, and make themselves scarce as soon as possible.

It would be a matter of great difficulty to arrive at any thing like an accurate calculation of the number of these street and burial-ground dogs in Constantinople. I have sometimes counted them in one street, and sometimes in quarters or divisions, at several different parts of the city and suburbs, and from these data

endeavoured to come to an accurate calculation; but the sum total has always been such as to make me stagger; and I am almost certain that I shall not be credited in stating their number to be about 200,000; though I think this account more likely to be under than above the fact. It may be wondered how so many of these animals obtain food; and I must admit myself perfectly unable to solve the problem, but imagine that the great source of their sustenance is derived from being the scavengers of the city and suburbs, devouring all sorts of filth and dirt thrown out from the houses; they also feed upon such strange dogs or cats, or stray rats, that may fall in their way, for they have all their particular locality, in which they are whelped, suckled, and fed, and in which they live and die. Woe betide the unfortunate dog that strays out of his district into that of another clan! If he escapes being torn to pieces, he will return to his own quarter well covered with wounds. The extent of these canine divisions of the city vary from sixty to two hundred yards in range; in any part of which, a dog appertaining to it is perfectly safe from all attack of his own species; but if once beyond its precincts into that of a strange clan, the chances are ten to one that he never returns. I have seen many strange dogs get into the neighbourhood where I lived, but very rarely saw any of them effect their escape. The whole dogs of the district, in such cases, are drawn together by a particular kind of howl or bark, and the intruder being pulled down, is speedily devoured.

The cats of the district live on terms of great amity with the dogs, and often may be found sleeping together in the street; but the cat that is imprudent enough to stray along the ground from his own quarter, is soon food for the resident dogs of the dis-

trict intruded on. The cats, however, are not often so foolish; if they are inclined to ramble, they do so along the house-tops, as they can do for miles without any danger, taking the liberty of entering such houses as they find accessible in their stroll, and freely helping themselves, when they can, to the cheer of the lorder.

It is not an uncommon thing in severe weather to see the Turks with a bag of coarse bread under their arms, feeding these animals in the street, although they would not give a morsel of it to a Christian dying of hunger; and there are certain portions of the city where a certain number of dogs are fed every day by order of various deceased Sultans. Connected with all the different barracks there is generally a band of from two to six hundred dogs, who may be seen scattered about the neighbourhood at all hours, basking themselves in the sun in summer, or warming themselves in the snow in winter.

When the hour draws nigh for the soldiers' dinner or supper, they will all be gathered together in front of the barrack-gate, as closely huddled together as a flock of sheep, wagging their tails, and looking the very picture of joyous anticipation until the dinner is over; when the cart filled with the bones and cast-away morsels of the soldiers' repast appears, the dogs surround it on every side; and while it is being drawn to the place appointed for tumbling it up, the frenzy is great; but when the emptying takes place, and the precious morsels are scattered on the ground, the excitement is at its height.

One evening, last winter, about an hour before sunset on returning from a walk along with a friend, we saw a crowd of at least two hundred dogs on the hill in front of the artillery-barracks, at the north end

of Pera ; they seemed close huddled together, but there was a large space in the centre of the crowd, and something occupying it, which was the point of attraction. Fearing that it might be some one fallen down unwell, or pulled down by these brutes, we made towards the spot, as by this time we had become so accustomed to the manner of frightening the dogs, that we had no fear. On a nearer approach, we found an old white horse on the ground, and apparently at the point of death: every now and then he was lifting up his head, and gazing on the expectant crowd around him, on which the circle would be considerably enlarged ; but the moment his head dropped, then they gathered more closely around the horse. If ever there was fear expressed in the eye and countenance of an animal, it was in that of the white horse; for as he slowly lifted his head from time to time, and gazed around, he seemed as if conscious of the fate that awaited him, and frightened that the dogs would begin to eat him before he was dead. My friend and myself being provided with two strong oak-sticks, dealt two thundering blows on the skulls of two of the greedy expectants of a feast: they howled fearfully, and the others caught up the chorus, and they all set off ; the poor old horse seemed thankful, and actually bowed his head as we departed in token of his gratitude!

After we left the scene a few minutes, we looked round, and saw the scared dogs stealthily making their way to the place ; and on the following morning, about an hour after sunrise, on going to the same spot, all we found of the horse was a part of one of the legs and the hoof ; all the other parts were either devoured or carried away: but how the dogs managed to separate the parts, I am at a loss to know, as we

saw the horse entire very shortly before sunset, and it was not more than an hour after sunrise when we returned to the spot. It is ordered by the sultan, that when a horse, bullock, or any large animal, becomes a prey to the dogs, that a guard be sent with axes, &c. to cut it up, in order that the dogs may more easily make away with it: and I have frequently seen them doing so; yet in this instance I could not imagine the guard could have known to turn out before sunset, unless they had been watching the death of the horse from the barrack-windows.

The dogs in the burial-ground, have also their localities, beyond which they cannot stir without risking their lives. Their food seems to be the dead subjects of the Ottoman Porte; for although the Turks bury in a coffin, and also batten it down with boards, the body is not more than from eight to twelve inches from the surface of the earth, and easily got at by the dogs, who, on account of the sloping nature of the greater part of the burial-grounds, can frequently enter a coffin without disturbing much of the surface of the grave, and not only find savoury food in the dead Mussulman's tomb, but also cheap and comfortable lodgings if the weather be severe.

The burial-ground dog may, on the whole, be said to be better provided against the effects of the weather than he of the street; as the first can at any time find a lodging in some grave, that has formerly served him as a dining-room; while the poor street-dog is obliged to content himself by creeping, in the cold nights, as close to the side of the house as he possibly can.

It is a very common thing, after a severe night, for an early riser to see in his morning's walk, ten or twenty dead dogs; but as the day wanes apace, these

disappear. The dead-dog man appears with his donkey, receives a piastre from the unfortunate Frank near to whose door a dead dog is lying, lifts the defunct upon the back of his ass, carries it off, and deposits it in some locality where a few other dogs, more hungry than fastidious, soon make upon the carcass a morning repast.

It has been said by many who have visited Constantinople, that these dogs are perfectly harmless, and will not molest the Frank stranger unless he disturbs them. This remark may have been true at one time, but it is not so now, as no one in the Frank dress is safe to walk in many parts of the city unless provided with a good stick; of which they seem to have a very salutary dread, and in most cases will be content to bark and howl at it, without approaching within risk of being touched by it. Any person in the Turkish dress, with a turban on his head, needs no stick, as they never molest the Turks; but if a Frank hat or cap is worn, a thick stick is indispensable.

One evening, in coming through the "Petit Champ des Marts," a little before sunset, accompanied by a friend lately arrived, I accidentally strolled on a little in advance of him; on hearing a howling behind, I looked round, and beheld the gentleman surrounded by about a dozen of these yelping curs; he was dressed in a hat, and wore a blue cloak, but had no stick. He had turned upon his tormentors, and was endeavouring to kick them, but to no purpose. Seeing that he was rather unpleasantly situated, I made the best of my way towards him, but ere I arrived, they had caught hold of him by the cloak and pulled him down. The moment I made my appearance, the howling ceased, and the dogs fell back to a respectful distance from the Turkish dress in which I chanced to be walking.

The young gentleman got upon his feet again, more frightened than hurt, his cloak was torn in two or three places, but that was all the damage he had received.

At another period, when coming through the same burial-ground, on the route from Tersana to Pera, about sunset, dressed in a black hat, surtout, and trowsers, without any stick, I was suddenly reminded of my position by a pack of about ten dogs coming after me in full cry. To run would have been bad, and to stand no better; so occasionally looking round to deter too near an approach, I walked slowly along until I picked up two large stones. The moment the movement was observed, they retired; but I having made a feint of throwing them away, they again approached, with a considerable addition to their number. I walked on, and apparently took little notice, until the pack was about three yards from me, when turning round, I threw one of the stones with all my force amongst them; it struck one on the head, he gave a most dreadful howl, and tumbled over; the others set up a full chorus, turned tail, and made off with all possible speed. At this moment eight or ten Turkish women approached, and seeing the animal lying howling on the ground, and a large stone in one of my hands, began abusing me for a *giaour*, and saying I had no business to strike the dog; which abuse, though contrary to the laws of gallantry, safety compelled me to return, along with a threat, that if they would not let me quietly pass I would finish him off with the stone I held in my hand. They then sat squat down on the bank near to the wounded animal, and began to console it, something after the manner a nurse speaks to a squalling child, and I pursued my way unmolested.

That the Turkish dogs are often annoyed unnecessarily by the Franks, there is no doubt; but, on the other hand, the dogs are often the aggressors, as may be seen from the following instances, many more of which I could give :—

One fine winter day, at the commencement of the present year, when walking on the banks of the Bosphorus, a little below Therapia, along with an Irish artist, we were passing a Turkish guard-house, and talking on some subject which engaged our attention so much that we were not aware that there were any dogs near us, when one caught the Irish gentleman by the calf of the leg, and instantly returned to the sentinel's feet. Enraged beyond measure, my friend seized hold of my stick, and flung it so as to strike the dog's legs; it was, however, too cunning, and evaded him. He was not to be so baulked, and lifting a stone about fourteen pounds weight, he struck the dog on the chest; it dropped down, and the Turkish sentinel began to abuse him, and threaten imprisonment if he again touched it. He was, however, in too great a passion to care for a Turkish sentinel with an empty musket, and telling him to look to himself, or he would have a touch at him after he was done with the dog, he lifted up a much larger stone, and killed it at one blow, as it lay gasping for breath.

In the other instance, the aggressor was more fortunate; for coming along the principal street of Pera, a dog came running out of the ruins of an old building, caught me by the thigh, and tore my trowsers; before I had time to strike him with my stick he was gone; although a very unfriendly trick it was a very nimble one. The wound, however, healed in a few days, as all wounds from these dogs do; for hydrophobia is perfectly unknown in Constantinople.

It has been said that there is a penalty inflicted on the Christian who kills a dog; but I have seen many killed, and never saw any notice taken of it, more than a passing exclamation of horror, from the passing mussulman.

A quarantine has now been established at Constantinople, one of the effects of which has been the employment of some thousands of carts and horses to carry away the filth and rubbish thrown from the houses. Where the poor dogs are to find food after this infringement of their ancient rights and privileges as scavengers of the city, it is hard to say; but the probability is, that they will die by thousands from actual starvation. They are perfectly useless, and the board of health applied to the late sultan for permission to kill them; but he would not grant it, as such a proceeding is contrary to the Koran; it is one, however, that has been formerly tried.

In 1613, Napuf Pasha, grand vizier to Achmet the Third, transported all the dogs to Asia, and would have had them there destroyed; but the sultan, on consulting the Mufti, was told that every dog had a soul, and consequently forbade it. After the destruction of the Janiparies, Mahmoud seems to have intended to get rid of them, for he caused an immense number of sausages to be bought, and having poisoned them gave the dogs a feast. Many thousands were thus killed in one day; but the people murmured so much, that he was afraid to commence a second day's work; he therefore ordered them to be expelled to Asia, but the order was very indifferently executed, and they are now again almost as numerous as during the time of the Janiparies.

In England, a dog is a gentleman compared to one of these poor miserable outcasts, covered with mange

and sores, swarming with vermin, and starving with hunger. Verily, no one, until they have seen "the city of the Faithful," can understand in its full force, "*I have not the life of a dog!*"

A newfoundland dog, which, as is common with dogs, took great pleasure in walking with his master; he soon found out that the act of taking hat and gloves, or of merely putting aside books and papers, at certain times of the day, were indications of the master's intention of going out, and he expressed his anticipation of pleasure by manifest signs. Several times, however, the dog had been sent home, as his company could not always be convenient to his master. The consequence was, that the dog would take good care not to show that he expected to leave the house, but he would slily steal out of the room as soon as he thought that any indications of a walk had been given, and wait at a certain corner, which the master had to pass daily, and which was at a considerable distance from home. Surely this indicates some operation of the mind not to be accounted for by instinct.

I can give another more striking instance of mental operation in this intelligent animal: he accompanied a servant who rode to a place some distance from home. The horse was tied to a tree in front of a house while the servant executed his message. When, after some delay, he came out of the house, the horse was gone; he went on a hill, and from this elevated spot he observed the dog leading the horse by the bridle, which the canine leader held in his mouth, both trotting at a moderate pace. The dog brought home the horse and led it to its proper place in the stable. So he was in the habit of leading one of the horses to be watered. This animal was sent from the coast of Labrador, and was not of the common long-

haired breed of Newfoundland dogs.—*Lieber's Political Ethics.*

There is a chapter in one of our metaphysical writers showing how dogs make syllogisms. The illustration is decisive. A dog loses sight of his master, and follows him by scent till the road branches into three; he smells at the first, and at the second; and then, without smelling further, gallops along the third. That animals should be found to possess in perfection every faculty which is necessary to their well-being is nothing wonderful; the wonder would be if they did not; but they sometimes display a reach of intellect beyond this. For instance, dogs have a sense of time so as to count the days of the week. My grandfather had one who trudged two miles every Saturday to market to cater for himself in the shambles. I know another more extraordinary and well-authenticated example:—

A dog, which had been sold by an Irishman, and was sold by him in England, would never touch a morsel of food on a Friday; the Irishman had made him as good a Roman Catholic as he was himself. The dog never forsook the sick-bed of his last master, and when he was dead, refused to eat, and died also.

An Intelligent Dog.—A person of the name of John James, residing at Little Eccleston Hall, near Poulton-le-Fylde, a few days ago went on his ordinary business to Lancaster, accompanied by a shepherd's dog kept by him. After his arrival, he had occasion to write to his family at home. He accordingly indicted a letter, and gave it to the dog, desiring him to "go his way back, and carry it safe;" which the dog did, performing his master's wish in three hours. The distance was twenty miles.

A Religious Dog.—Mr. Simpson, farmer at Bowness,

in Cumberland, has at present a sheep-dog in his possession which attends church every sabbath during the morning service. As soon as the bell commences ringing, the dog shows symptoms of considerable anxiety; and after a few peals have been rung, he may be seen proceeding towards the sacred edifice, unaccompanied by any one. Perhaps the most extraordinary fact is, that he never attends the church but on Sundays, although the bells ring frequently during the week.

A Word for the Dumb Creation.—During sultry weather, all persons who keep dogs and horses, will, if they be thoughtful and humane, give them free access to water, and plenty of it. The annual English epidemic, a horror of mad dogs and hydrophobia, when at its full height, causes magistrates even to issue ordinances for the destruction of all dogs found at large. It would be much more to the purpose if they provided fountains at which the poor creatures could quench their thirst. In Portugal, and other hot countries, where dogs are much more numerous than here, and many of them ownerless, the disease called hydrophobia is unknown, because there they have the liberty of assuaging the intensity of thirst at their option, which is the great preventative against this fatal malady.

MATERIA MEDICA.

A TABLE OF THE WEIGHTS AND MEASURES GENERALLY USED IN THE COMPOUNDING OF MEDICINES.

Weights.

The Pound	Contains	Twelve ounces.
The Ounce		Eight drachms.
The Drachm		Three scruples.
The Scruple		Twenty grains.

Measure of Fluids.

The Gallon	Contains	8 pints.
The Pint		16 Fluid ounces.
The Fluid ounce		8 Fluid drachms.
The Fluid drachm		60 minims, or drops

Abbreviations.

Gut or Min.	For	Drop.
Gr.		Grain.
℈		Scruple.
ʒ		Drachm.
℥		Ounce.
lb.		Pound.

BLISTER.

Are applications to the skin, which separate the cuticle in the form of vesicles containing a serous fluid. They excite increased action in the vessels of the skin, by means of which this fluid is thrown out. The part or neighbouring parts are somewhat relieved by this discharge, but more by the inflam mation and pain which are produced, and which lessen the inflammation and pain previously existing in some contiguous part.

The substances used are various; the most important is the meloe cantharides or Spanish fly. Euphorbium is sometimes used. In common blistering for strains, &c., where the expense of cantharides is objected to, auxiliary vesicatories may be admitted, among which the tincture of croton is now used.

No. 1. Blister for General Use.

Powdered Cantharides - -	1 pound.
Venice Turpentine - - -	1 pound.
Resin - - - - -	1 pound.
Palm Oil, or Lard - - -	2 pounds.

Melt the three latter articles slowly together, and when not too hot, gradually mix the cantharides or flies.

No. 2. A Powerful Blister.

Powdered Euphorbium - -	3 ounces.
Oil of Vitriol - - - -	2 drachms
Spanish Flies - - -	1 pound.

Palm Oil, or Lard - - - 3 pounds.
Oil of Turpentine - - - 8 ounces.

Melt the resin with the lard or oil, after which add the turpentine.

No. 3. Blisters for Sprains, Spavins, Splints, &c.

Of either of the former - - 4 ounces.
Corrosive Sublimate - - 2 scruples

No. 4. Liquid Blister, (strong.)

Spanish Flies - - - - 8 ounces.
Oil of Turpentine - - - 2 quarts.
Olive Oil - - - - 1 quart.

Steep the flies in the Turpentine three weeks; strain off, and add the olive oil.

No. 5. Liquid Blister, (mild.)

Of the above - - - - 1 pint.
Olive Oil - - - - $1\frac{1}{2}$ pints.

CLYSTERS.

No. 1. A Laxative Clyster.

Thin Gruel or broth - - 5 quarts.
Epsom, or common Salt - - 6 ounces.
Or Yellow Soap - - 2 ounces.

No. 2. A Clyster for Gripes.

Mash two ordinarily-sized onions; over which pour—

Oil of Turpentine - - -	2 ounces.
Thin Gruel - - - -	4 quarts.

No. 3. A Nourishing Clyster.

Thick Gruel - - - -	3 quarts,
Strong Ale - - - -	1 quart,

mixed. Or—

Strong Broth - - -	2 quarts,
Thickened Milk - - -	2 quarts,

mixed.

No. 4. Astringent Clysters.

Tripe Liquor, or Suet boiled in Milk - - - -	3 pints.
Thick Starch - - -	2 pints.
Laudanum - - - -	4 drachms

Or—

Alum Whey - - - -	1 quart.
Boiled Starch - - -	1 quart.

A Saline Embrocation,

Often used and found to render the most essential service, and to which frequent reference is made, is as follows:—

Crude Sal-ammoniac	8 ounces,
Vinegar	3 pints,

mixed.

Other formulæ would extend beyond the limits of this work.

POULTICES.

1. A Common Softening Poultice.

Bran, as much as is required; pour on it boiling water to form a thin paste; add linseed-meal sufficient to make it adhesive. After this, stir in one or two ounces of sweet oil.

2. A Cooling Poultice.

Bran, any quantity; pour on it sufficient quantity of cold Goulard water to form a poultice · when as it dries, moisten with more Goulard water.

3. A Cleansing Poultice, for Grease, &c.

Oatmeal	half a pint.
Linseed Meal	half a pint.
Powdered Charcoal	half a pint
Stale Beer grounds	half a pint.

Or—

Carrots scraped, sufficient to make a poultice.

Or—

Turnips boiled and mashed.

To either of these four ounces of charcoal may be added. Or—

Linseed-meal or oatmeal any quantity.

Mix with boiling water, and ferment with a table-spoonful of yeast; as it rises, apply to the part.

In cases of extensive gangrene, an ounce or two of oil of turpentine may be added to either of these poultices.

STIMULANTS,

Are of various kinds, and extremely numerous; they exert an influence on the system by increasing the power and action of a part or the whole of it.

1. Stomachic Stimulants.

Gentian - - - -	8 ounces.
Ginger - - - - -	4 ounces.
Coriander Seeds - - -	8 ounces.
Caraway Seeds - - -	8 ounces.
Oil of Anniseed - - -	4 drachms.

Make into a mass with lard, honey, treacle, or conserve of roses, and give one ounce and a half for a dose.

Or—

Of the above mass - -	1 ounce.
Gum Myrrh - - - -	1 drachm.
Balsam of Tolu - - -	1 drachm.

Or—

Of the first mass - - - 10 drachms.
Camphor - - - - 1 drachm.
Opium - - - - 20 grains.

Either of these may be given as a drink also, by infusing the powder in a pint of ale.

Under the head of Glanders, I have mentioned certain stimulants recommended by Mr. Vines.

2. Permanent Stomachic Stimulants.

Powdered Canella Alba - - 4 drachms.
Ginger - - - - 1 drachm.
Blue Vitriol - - - - 1 drachm.

Make into a ball with conserve of roses. Or—

Decoction of Camomile - - 3 pints.
Watery Tincture of Aloes - 4 ounces.
Ginger, (in powder) - - 4 drachms.
Green Vitriol - - - 12 drachms.

Mix and divide into four drinks. Or—

Gum Myrrh - - - 2 drachms.
Mustard Flour - - - 1 drachm.
Cantharides - - - - 5 grains.
Camomile powder - - - 4 drachms.

Make into a ball with thin Venice turpentine. Or—

Powdered Gentian - - - 3 drachms.
Powdered Quassia - - - 3 drachms.
Powdered Grains of Paradise - 3 drachms.

Make into a ball with Venice turpentine.

3. Tonic Stimulants.

Gum of Myrrh - - - 3 drachms.
Green Vitriol - - - 2 drachms.

Camomile Powder - - -	3 drachms.
Ginger - - - - -	1 drachm.

Mix into a ball with turpentine or palm oil; or into a drink with a pint of mild beer. Or—

Arsenic - - - -	10 grains.
Gentian - - - -	3 drachms.
Cascarilla - - - -	3 drachms.

Mix into a ball with conserve of roses; or as above into a drink. Or—

Gum Myrrh - - -	3 drachms.
Powdered Gentian -	3 drachms.
Levigated Rust of Iron - -	2 drachms.

Make into a ball.

A list of Tonics will be found following the stimulants, under the same disease before referred to, namely, Glanders; and those are especially recommended for the purpose by Mr. Vines. The above recipes may be given daily, and have, in cases where they are requisite, been of the greatest service.

DIURETICS,

Are of various kinds, and may be given in the form of *balls* or *powders;* a formulæ of each is added.

Diuretic Ball.

Resin, yellow - - - -	4 pounds.
Nitre - - - -	2 pounds.
Horse Turpentine - - -	2 pounds.
Yellow Soap - - - -	1 pound.

Melt the resin soap and turpentine over a slow fire, and when cooling, add the nitre. Strong dose, one ounce and a half to two ounces. Mild dose, six drachms to eight. The former may be given once a week; the latter, every third or fourth day.

Diuretic Powders.

Yellow Resin, (powdered) - -	2 pounds.
Nitre - - - - -	4 pounds.
Cream of Tartar - - -	2 pounds.

Dose, six drachms to ten or twelve, twice a week, in a mash.

OILS,

Are either fixed or volatile. The *fixed oils* are so called, because they are not liable to be changed into vapour but under a high degree of temperature, and are also generally gained in quantities by expression. The *volatile oils*, on the contrary, are produced by distillation, and evaporate by a moderate heat. The fixed kind, in horse practice, are—

1. Oil of Bay,

An expressed oil from bay berries; now obsolete, except in the recipes of the country smith.

2. Oil of Castor.

In very large doses, this occasions some disturbance of the bowels, and does not often operate as a laxative; but in doses of eight or ten ounces, repeated every five or six hours, it proves frequently an excellent laxative, when more drastic matters are inadmissible. It is apt to be descried, and numerous experiments are detailed to prove that it is noxious as well as inert: but hardly any two experiments agree. I have used it for years without experiencing any ill effect, but often the best from its use. It is true, it can never gain a character as a certain aperient; it is, on the contrary, an uncertain one, unless joined with a watery tincture of aloes, or with the neutral salts, when the mixture seldom fails, if mashes have been in use: alone, it must be owned it is not always safe as a purgative. It is always a safe and invaluable purge with a dog.

3. Oil of Olives

May be substituted for castor oil when the latter cannot be obtained. It is the principal medium in the composition of liniments, and enters into many ointments.

4. Oil of Linseed

Is considered as a pectoral by old farriers, and was much used in coughs, but is now seldom given. It is also a certain laxative, and more to be depended on than olive oil, and often more than castor oil.

5. Oil of Palm.

Country practitioners hardly know there is such an article as this, which has the consistence of all the other properties of lard with the addition of a most fragrant smell. In quantities it may be also purchased cheaper than lard, and as it does not become rancid, it is generally to be preferred: it must also be less noxious to the stomach of the horse than the animal oil of the swine.

The *essential* or *volatile* oils are:—

1. Oil of Amber,

An anti-spasmodic not much in use. It is said to have a peculiar property of hastening the action of aloes.

2. Oil of Anniseed.

This is an excellent warm aromatic, and may very properly be added to cordial balls in doses of ten or thirty drops.

3. Oil of Caraways

May be used in the same way, and considered in a similar point of view.

4. Oil of Juniper.

Is often added to diuretic balls, to increase their effect; it acts, however, principally as a warm aromatic.

5. Oil of Petre.

Is only Barbadoes tar in oil of turpentine.

6. Oil of Tar.

Is a cheap penetrating distillation from tar, that may be substituted for turpentine: but it may be better employed in a mixture with whale oil, as a suppleing matter for the hoofs.

7. Oil of Origanum.

Is a warm penetrating oil, and was formerly much used among farriers as an external stimulant; but it possesses no powers superior to turpentine, and is therefore little used by modern practitioners.

8. Oil of Spike.

Though much used by the older farriers, is nothing more than oil of turpentine coloured with alkanet root.

CATHARTICS.

WHATEVER excites the intestines to a more early, a more frequent, and a more copious discharge of their contents, may be termed a cathartic or purge. If this effect be intended to be produced in a slight degree only, the article effecting it is termed a *laxative*. The principal cathartic in veterinary practice, is aloes.

Castor oil, calomel, and neutral salts, may be considered as laxatives.

CERATES.

ARE ointments of a dry healing nature; the principal of which is calamine or Turner's cerate.

BURGUNDY PITCH,

Differs but little from resin, and will be found under that head.

ALOES.

THERE are two kinds used in horse practice, the Barbadoes and the Cape. The Socotrine preferred by the human surgeon are very uncertain in their effect on the horse. Of the Barbadoes and the Cape, the first are much to be preferred.

Barbadoes aloes are obtained principally from the island of Barbadoes, and are the juice of the large leaves of the aloes boiled to a considerable thickness, and then poured into gourds, in which they gradually harden

The true Cape is the extract of a species of aloes chiefly cultivated from the Cape of Good Hope.

The Socotrine aloes are of a brown colour, inclining to red, and brittle.

The Barbadoes aloes are black, with a shade of brown, of an unctuous feeling and a stronger smell, broken with difficulty, and the fracture dull.

The Cape are darker coloured, stronger smelling, very brittle, and the fracture perfectly glossy.

Every person who uses much aloes should buy them in the mass, and powder them himself; and then, by attending to this account of the difference of the three, he can scarcely be imposed upon. Aloes purchased in powder, are too often sadly adulterated. The Cape may be powdered at all times; and the Barbadoes in frosty weather, when enough may be prepared to be kept in closed bottles for the year's consumption. They may also be powdered when they have been taken from the gourd and exposed to a gentle heat for two or three hours before they are put into the mortar.

Fifteen ounces of powdered aloes, mixed with one ounce of ginger, and beaten up with eight ounces of palm oil, and afterwards divided into the proper doses, will form a purging mass more effectual, and much less likely to gripe, than any that can be procured by melting the drug. If the physic is given in the shape of a ball, it more readily dissolves in the stomach, and more certainly and safely acts on the bowels when made up with some oily matter, like that just recommended, than when combined with syrup or

honey. It is also worse than useless to add any diuretic to the mass, as soap or carbonate of soda. The action of these on one set of organs, will weaken the action of the aloes on another.

A physic mass should never be kept more than two or three months, for after that time it rapidly loses its purgative property.

Directions for physicing will be found elsewhere. We will only add that, as a promoter of condition, the dose should be always mild. A few fluid stools will be sufficient for every good purpose. Violent disease will alone justify violent purging.

Three drachms of Barbadoes aloes will have as much purgative effect as four drachms of the Cape, exclusive of griping less, and being safer. If the horse is well mashed, and carefully exercised, and will drink plenty of warm water, the Cape may be ventured on, or at least mixed with equal quantities of the Barbadoes; but if there be any neglect of preparation for physic, or during the usual operation of the physic, the Cape are not to be depended upon, and may be dangerous.

Some persons are fond of what are called half doses of physic. Three or four drachms are given in one day, and three or four on the following; and, perhaps, if the medicine has not operated, as in this divided state it will not always, two or three additional drachms are given on the third day. The consequence is, that the bowels having been rendered irritable by the former doses, the horse is over purged, and inflammation and death not unfrequently ensues when the effect of the three becomes combined.

In physicing a horse, whatever is to be done should be done at once. Whatever quantity is intended to be given should be given in one dose.

The system of giving small doses of aloes as altera-

tives, is not good. These repeated small doses lodging in some of the folds of the intestines, and at length uniting, often produce more effect than desired; and it is never safe to ride a horse far or fast, with even a small dose of aloes in him.

Most of all objectionable is the custom of giving small doses of aloes as a nauseat in inflammation of the lungs. There is so much sympathy between the contents of the chest and belly of the horse, and inflammation of one part is so likely to be transferred to another, that it is treading on very dangerous ground, when, with much inflammation of the lungs, that is given which will stimulate and may inflame the intestines

Aloes are most commonly, because most easily, administered in the form of a ball, but in a state of solution their effect is more speedy, effectual, and safe. Two ounces of aloes, and one ounce of gum, (to suspend the imperfect solution of the aloes,) are put into a pint of boiling water, and the mixture freely stirred.

When it is cold, two ounces of tincture are added, as an aromatic, to prevent the griping of the aloes, and also to keep the mixture from fermenting. The aloes must not be boiled in the water; even five minutes' boiling would take away much of the purgative effect of the drug. The dose of the solution should vary from six to eight ounces.

Aloes are useful in the form of a tincture. Eight ounces of powdered aloes, and one ounce of powdered myrrh, should be put into two quarts of rectified spirit, diluted with an equal quantity of water. The mixture should be daily well shaken for a fortnight, and then suffered to stand, that the undissolved portion may fall to the bottom. This will constitute a very excellent application for wounds, whether recent or

of long standing, and indisposed to heal. It is not only a gentle stimulant, but it forms a thin crust over the wound and shields it from the action of the air.

The principal adulteration of aloes is by means of resin, and the alteration of colour is concealed by the addition of charcoal or lamp black

This adulteration is easily enough detected by dissolving the aloes in hot water. All aloes contain some resinous matter, which the water will not dissolve, and which has very slight purgative effect. The excess of this resin at the bottom of the solution will mark the degree of adulteration.

ALUM.

This compounded body of sulphuric acid and pure argil, is in very general use in veterinary practice both externally and internally. In doses of one or two drachms, it is a useful astringent in diarrhœa, diabetes, and other fluxes; it also possesses some virtue as a stomachic. Externally, it is used as a styptic to stop hæmorrhage, by sprinkling it on the bleeding orifice, when its coagulating properties plug up the mouth of the vessel.

It is a useful escharotic to destroy fungus, and a valuable detergent for foul ulcers.

It is also a useful stimulant in inflammation of the eye; and a whey made of it forms a good astringent clyster.

When it is burnt, it is rather milder, but its properties are not otherwise materially altered.

AMMONIA CRUDE.

It is called crude to distinguish it from the volatile or prepared ammonia, which follows. It is one of the best discutients, and when in mixture with acetic acid or vinegar, it forms the *saline* embrocation of which much mention has been made elsewhere · from it is prepared—

Ammonia Volatile.

The gaseous ammonia, fixed into a solid form by combination with carbonic acid, forms the volatile ammoniacal salt of the druggists. It has been said to be a good stimulant in the latter stages of fever: united with vinegar, it forms the spirit of mindererus, a most excellent human febrifuge.

Ammonia Acetatis

Is made by pouring a quart of vinegar on an ounce of volatile salt of ammonia; it may be also made by taking any quantity of the carbonated water of ammonia or spirit of hartshorn, and adding vinegar till it tastes neither salt or sour. It is considered as a very important medicine in horse practice; it gently invigorates, is diaphoretic, and sometimes proves a mild diuretic.

It principally shows its salutary effects on the commencement of the debile stage, or at the close of lingering febrile diseases, particularly of the epidemic catarrh; in which case it may be combined with cam-

phor, but more particularly with powdered camomile. In the more early stages of the epidemic catarrh, it may be united with nitre and oxymel. The dose is from four to six ounces.

In strains and ligamentary lameness, it forms a very useful external application also.

Ammonia, Carbonate of.

This is called salt of hartshorn; carbonated water of ammonia is the spirit of hartshorn of the shops. It is convenient in veterinary practice, from its peculiar properties of uniting oil and water. Internally, it is an anti-spasmodic, in doses of eight to ten drachms.

DIGESTIVE OINTMENT.

Of these there are several: they are principally used as stimulants to wounds just healing, and produce a healthy state and action in them, especially after the application of caustics.

No. 1.

Turner's Cerate - - - 6 ounces,
Turpentine - - - - 2 ounces,
mixed.

Or, take of—

No. 2.

Common Turpentine - - 3 ounces,
and beat it up with the yolk of two or three eggs, and add—

Myrrh - - - - -	4 drachms.
Mastic - - - - -	2 drachms.

This must be made into a consistency with tincture of myrrh.

Gibson recommends—

No. 3.

Yellow Wax - - - -	3 pounds.
Yellow Rosin - - - -	3 pounds.
Burgundy Pitch - - -	3 pounds.
Common Turpentine - -	12 ounces.
Linseed Oil - - - -	3 lbs. 6 ozs.

These are to be melted over a slow fire, and they gradually assume the appearance of an ointment.

To make Black Basilicon—

Take—

No. 4.

Yellow Wax - - - -	1 pound.
Yellow Rosin - - - -	1 pound.
Pitch - - - - -	1 pound.
Olive Oil - - - -	1½ pints.

These must be put on a fire till melted, and then strained through a piece of rag.

In cases where proud flesh is attached to the wound, a small quantity of red precipitate must be mixed with No. 4.

The ointment No. 1, is especially useful, and ought always to be kept at hand.

ON THE NATURE AND USE OF ANTIMONIALS.

ANTIMONY, when prepared in a certain manner, is so useful a medicine in veterinary practice, that every practitioner should understand its nature and properties.

If powdered antimony be exposed to a gentle fire, the sulphur exhales; the metallic part remaining in the form of a white calx, reducible, by proper fluxes, into a whitish brittle metal, called *regulus*. This is readily distinguished from the other bodies of that class by its not being soluble in aquafortis; its proper menstruum is aqua regis.

If aquafortis be poured on crude antimony, the metallic part will be dissolved, and the sulphur thrown out, partly on the sides of the vessel, and partly to the surface of the liquor, in the form of a greyish yellow substance. This separated and purified by sublimation, appears in all trials the same with pure common brimstone.

The metal, freed from the sulphur naturally blended with it, and afterwards fused with common brimstone, resumes the appearance and qualities of crude antimony. There is a striking difference between the effects of the preparation of antimony on the human and brute stomach. To the former, the antimonial medicine is of the greatest power of any known substance. The quantity even of a single grain is capable of producing the most active effects if taken dissolved or in soluble state. If given in such a form as to be immediately miscible with animal fluids, it proves violently emetic; if so managed as to be more

slowly acted upon, it proves cathartic; and if the dose be extremely small, diaphoretic.

Thus, though vegetable acids extract so little from this metal, that the remainder seems to lose nothing of its weight, the tinctures prove, in large doses, strongly emetic; and in smaller ones, powerfully diaphoretic. The regulus has been cast into the form of pills, which acted as violent cathartics, though without undergoing any diminution in their weight in their passage through the body, and this repeatedly for a great number of times. These preparations, however, exhibited to the horse, have a less sensible effect. Notwithstanding this, they are of great importance in the treatment of several diseases with which he may be afflicted. This metal, divested of the inflammable principle, which it has in common with other metallic bodies that are reducible to a calx, becomes indissoluble and inactive. The calx, nevertheless, when urged with a strong fire, melts into a glass, which is as easy of solution, and as violent in operation in the human subject, as the regulus itself; the glass, thoroughly mixed with such substances as prevents its solubility, as wax, resin, and the like, is again rendered mild.

Vegetable acids, as have already been observed, dissolve but an extremely minute portion of the metal; the solution, nevertheless, is powerful. The nitrous and vitriolic acids only corrode it into a powder, to which they adhere so slightly as to be separable in a considerable degree by water, and totally by fire, leaving the regulus in the form of a calx similar to that prepared by fire alone. The marine acid has a very different effect; this reduces the regulus into a violent corrosive; and though it unites with difficulty, yet it adheres so very closely, as not to be separable by any ablution, nor by fire, the regulus rising along with it.

The nitrous, or vitriolic acids, expel the marine, and thus reduce the corrosive into a calx similar to the foregoing. Sulphur remarkably abates the power of this metal, and hence crude antimony, in which the regulus appears to be combined with sulphur, from one fourth to one half its weight, proves altogether mild. If a part of the sulphur be taken away by such operations as do not destroy or calcine the metal, the remaining mass becomes proportionably more active. The sulphur of antimony may be expelled by deflagration with nitre; the larger the quantity of nitre to a certain point, the more of the sulphur will be dissipated, and the preparation will be more active.

If the quantity of nitre be more than sufficient to consume the sulphur, the rest of it, deflagrating with the inflammable principle of the regulus itself, renders it again mild.

The sulphur of antimony is likewise absorbed in fusion by certain metals, and by alkaline salts. These last, when mixed with sulphur, prove a menstruum for all metals, (zinc excepted;) and hence, if the fusion be long continued, the regulus is taken up, and rendered soluble in water.

From these particulars, with respect to antimony, it may naturally be concluded, that it not only furnishes us with an useful and active medicine, but that it may also be exhibited for veterinary purposes under several different forms, and that the effects of these will be considerably diversified.

The College of Physicians have, in regard to human medicine, restricted the number of preparations of antimony in their pharmacopeia to a few only; and it is highly probable, that, from the proper employment of them, every useful purpose to be answered by antimony as a remedy in the diseases of cattle may be accomplished.

Calcined antimony is prepared in the following manner:—

Take of antimony, powdered, eight ounces; nitre, powdered, two pounds; mix them, and cast the mixture, by degrees, into a red-hot crucible. Burn the white matter about half an hour, and, when cold, powder it; after which, wash it with distilled water.

In the last edition of the London Pharmacopoeia, this preparation had the name of *calx of antimony*; and it may be considered as at least very nearly approaching to some other antimonials of the Old Pharmacopoeia, particularly to the nitrated diaphoretic antimony, washed ditto, and stibiated nitre, none of which are now received as separate formula of pharmacopoeia; and indeed, even the calx of antimony itself, thus prepared, has now no place in the Edinburgh Pharmacopoeia.

The calx of antimony, when freed by washing from the saline matter, is extremely mild, if not altogether inactive, in the human subject. For a man, the common dose is from five grains to a scruple, or half a drachm; and Wilson relates, that he has known it given by half ounces, and repeated twice or thrice daily for several days together. Some report, that this calx, by keeping for a length of time, contracts an active quality, from whence it has been concluded that the powers of the reguline part are not entirely destroyed; that the preparation has the virtues of other antimonials, which are given as alteratives; that is to say, in such small doses as not to disturb the first passages. The uncalcined part being grosser than the true calx, the separation is effected by often washing with water, in the same manner as is directed by separating earthy powders from their grosser parts. It has been observed, that when diaphoretic antimony is

prepared with nitre abounding with sea-salt, of which all the common nitre contains some portion, the medicine has proved violent. This effect is not owing to any particular quality of the sea-salt, but to its quantity, by which the proportion of the nitre to the antimony is rendered less.

The *nitrum stibiatum*, as it was called, is produced by the deflagration of the sulphur of the antimony with the nitre, in the same manner as the *sal polychrest*, from which it differs no otherwise than in retaining some portion of the antimonial calx. Notwithstanding the doubts entertained by some of the activity of the *antimonium calcinatum*, yet the London College appears to have done right in retaining it; for whilst it is allowed to be the mildest of our antimonials, it is admitted, by several able practitioners, to be efficacious.

Crocus of Antimony.

Take of antimony, powdered, and nitre, powdered, of each one pound; sea-salt, one ounce: mix, and put them by degrees into a red-hot crucible, and melt them with an increased heat; pour out the melted matter, and when cold, separate it from the scoriac.

Equal parts of antimony and nitre are to be injected, by degrees, into a red-hot crucible; when the detonation is over, separate the reddish metallic matter from the whitish crust, beat it into powder, and edulcorate it by repeated washings with hot water till the water comes off tasteless. Here the antimonial sulphur is almost totally consumed, and the metallic part left divested of its corrector. These preparations, given from two to six grains, generally act as violent emetics, greatly disordering the constitution. But the opera-

tion, like that of every preparation of antimony, whose reguline part is not joined with the acid, must be liable to variations, according to the quantity and condition of the acid of the stomach. Farriers frequently give to horses an ounce or two in the day, divided into different doses, as an alterative. In the horse, and other quadrupeds of the herbiverous tribe, it acts chiefly as a diaphoretic. The chemists have been accustomed to make the crocus with a less proportion of nitre than what is directed above, and without any farther melting than what ensues from the heat which the matter acquires by deflagration, which, when the quantity is large, is very considerable; a little common salt is added to promote the fusion. The mixture is put, by degrees, into an iron pot or mortar, somewhat heated, and placed under a chimney; when the first ladleful is in, a piece of lighted charcoal is thrown to it, which sets the matter on fire; the rest of the mixture is then added by little and little, the deflagration is soon over, and the whole appears in perfect fusion; when cold, a considerable quantity of scoriac is found on the surface, which scoriac is easily knocked off with a hammer. The crocus prepared in this manner is of a redder colour than that of the former edition of the London Pharmacopoeia. And, indeed, the method now directed by the London College may be considered as founded on this. It differs principally from that of the Edinburgh College in the employment of the sea-salt, by which the process is much facilitated.

Muriated Antimony.

Is prepared by taking of the crocus of antimony, powdered, and vitriolic acid, of each one pound; dry sea-salt, two pounds. Pour the vitriolic acid into a retort, adding, by degrees, the sea-salt and the crocus of antimony, previously mixed; then distil in a sand-bath. Let the distilled matter be exposed to the air for several days, and then let the fluid part be poured off from the dregs.

Butter of Antimony.

Take crude, one part; corrosive sublimate, two parts. Grind them first separately, then thoroughly mix them together, taking the utmost care to avoid the vapours. Put the mixture into a coated glass retort, (having a short wide neck), so as to fill one half of it; the retort being placed in a sand-furnace, and a receiver adapted to it; give first, a gentle heat, that only dewy vapours may arise; the fire being then increased, an oily liquor will ascend and condense in the neck of the retort, appearing like ice, which is to be melted down by a live goal cautiously applied. This oily matter is to be rectified in a glass retort into a pellucid liquor.

The process here directed by the College of Edinburgh is extremely dangerous, insomuch, that even the life of the operator, though tolerably versed in common pharmacy, may be endangered for want of due care. Boerhave relates a case of a man who was suffocated for want of due care to prevent the bursting of the retort. The fumes which arise, even on mixing

the antimony with the sublimate, are highly noxious, and sometimes issue so copiously and suddenly as to be avoided with great difficulty. The utmost circumspection, therefore, is necessary. The butter of antimony, as it is called, appears to be a solution of the metallic part of the antimony in the marine acid of the sublimate; the sulphur of the antimony, and the mercury of the sublimate, remain at the bottom of the retort, united into an æthiops. The solution does not succeed with spirit of salt in its liquid state, and cannot be effected, unless, (as in the case of making sublimate,) either the acid be highly concentrated, and both the ingredients strongly heated, or, when the antimony is exposed to the vapours of the acid distilled from the black calx of manganese. By this last process, a perfect solution of the regulus of the antimony in the muriatic acid is effected. Of this more simple, more safe, and less expensive method, of preparing muriatic antimony, an account is given by Mr. Russel, in the Transactions of the Edinburgh Royal Society.

Antimonial Powder

Take of antimony, coarsely powdered, hartshorn shavings, each two pounds; mix and put them into a wide red-hot iron pot, stirring constantly till the mass acquires a grey colour.

Powder the matter when cold, and put it into a coated crucible. Lute to it another crucible inverted, which has a small hole in its bottom; increase the fire by degrees to a red heat, and keep it so for two hours. Lastly, reduce the matter, when cold, to a very fine powder.

In this preparation, which is the celebrated James's

powder, the metallic part of the antimony, in a state of calx, will be united with that part of the hartshorn which is indestructible by fire; viz., an absorbent earth. If this powder be properly prepared, it is of a white colour. It is a mild antimonial preparation, and is given as an alterative.

Precipitated Sulphur of Antimony.

Take of antimony, powdered, two pounds; water of pure kali, four pints; distilled water, three pints; mix, and boil them with a slow fire for three hours, constantly stirring, and adding the distilled water as it may be wanted; strain the hot ley through a double linen cloth, and drop into the hot liquor, by degrees, as much diluted vitriolic acid as is sufficient to precipitate the sulphur. Wash off, with warm water, the vitriolated kali.

Golden Sulphur of Antimony.

Boil, in an iron pot, four pounds of caustic ley, diluted with three pints of water, and throw in, by degrees, two pounds of powdered antimony, keeping them continually stirring with an iron spatula for three hours, over a gentle fire, and occasionally supplying more water.

The liquor, loaded with the sulphur of antimony, being then strained through a woollen cloth, drops into it gradually, while it continues hot, so much spirit of nitre, diluted with an equal quantity of water, as shall be sufficient to precipitate the sulphur, which is afterwards to be carefully washed with hot water.

The foregoing preparations are not strictly sulphurs; they contain a considerable quantity of the metallic part of the antimony, which is reducible from them by proper fluxes.

These preparations must of course be liable to great variations in point of strength, and in this respect they are perhaps the most precarious, though some have affirmed that they are the most certain of the antimonial medicines. They prove emetic when taken in the human stomach, in a dose of from four to six grains; but they are scarcely prescribed with this intention, being chiefly used as alterative deobstruents, particularly in cutaneous disorders.

Tartarised Antimony.

Take of crocus of antimony, powdered, one pound and a half; crystals of tartar, two pounds, distilled water, two gallons; boil in a glass vessel, about a quarter of an hour, filter through paper, and set aside the strained liquor to chrystalise.

Emetic Tartar.

Take of the butter of antimony what quantity you choose, pour it into warm water, in which as much of the purified vegetable fixed alkali has been previously dissolved, that the antimonial powder may be precipitated, which after being well washed, is to be dried. Then, to five pounds of water, add, of this powder, nine drachms; of chrystals of tartar, beat into a very fine powder, two ounces and a half; boil until the powders are dissolved. Let the strained

solution be slowly evaporated in a glass vessel to a pellicle, so that chrystals may be formed. The above are two modes of making the most common, and perhaps the most useful of all the antimonial preparations, long known in the shops under the name of emetic tartar.

These modes differ considerably from each other, but in both, the reguline part of the antimony is united with the acid of the tartar. It is, perhaps, difficult to say to which mode of preparation the preference is to be given, for on this point the best chymists are still divided in their opinions.

The mode directed by the London College, is nearly the same with that of former editions of their pharmacopoeia, while that which is now adopted in Edinburgh is of later date. It is very certain, however, that by either mode, a good emetic tartar may be formed. Bergman advises, that if the calx be precipated by an alkaline ley, it is more certainly freed from the muriatic acid.

In the after part of the process, whether precipitate or crocus have been used, the quality of the antimonial ought always to be some drachms more than is absolutely necessary for saturating the acid of tartar, so that no chrystals may shoot which are not impregnated with the active metallic part of the antimony. And, in order to secure an uniform strength, some attention is necessary in collecting the chrystals as some may contain more metal than others.

After they are all separated from the liquor, they should be rubbed together in a glass mortar, into a fine powder, that the medicine may be of uniform strength. Emetic tartar is, of all the preparation of antimony, the most certain in its operation in the human subject, when given even in a dose of a single grain; and it is an excellent alterative for horses, in

doses from half a drachm to two drachms so that the different proportion between the horse and the man, varies more in this medicine than in many others; for it appears that the horse can take forty times as much emetic tartar as a man; but in regard to aloes, twenty times the quantity taken by a man, is quite sufficient for a horse.

Vitriolated Antimony.

Take of powdered antimony four ounces; calcine it in a broad earthen vessel, with a fire gradually raised, stirring with an iron rod, until it no longer emits a sulphurous smoke.

Put this powder into a crucible, so as to fill two thirds of it. A cover being first fitted on, make a fire under it, at first moderate, afterwards stronger, until the matter be melted. Pour out the melted glass.

Glass of Antimony.

Strew antimony, beat it into a coarse powder, like sand, upon a shallow unglazed earthen pan, and apply a gentle heat underneath, that the antimony may be heated slowly, keeping it at the same time continually stirring to prevent it from running into lumps. White vapours of a sulphurous smell will arise from it. If they cease to exhale with the degree of heat first applied, increase the fire a little, so that the vapours may again rise; go on in this manner till the powder, when brought to a red heat, exhales no more vapours. Melt the calx in a crucible with an intense heat, till it assumes the appearance of melted glass, then pour it

out on a heated brass plate or dish. The calcination of antimony, in order to procure transparent glass, succeeds very slowly, unless the operator be wary and circumspect in the management of it.

The most convenient vessel is a broad shallow dish, or smooth flat tile, placed under a chimney. The antimony should be the purer sort, such as is usually found at the apex of the canes; this, grossly powdered, is to be evenly spread over the bottom of the pan, so as not to lie above a quarter of an inch thick upon any part.

The fire should be at first, no greater than is just sufficient to raise a fume from the antimony, which is to be now and then stirred; when the fumes begin to decay, increase the heat, taking care not to raise it so high as to melt the antimony, or to run the powder into lumps. After some time, the vessel may be made red-hot, and kept in that state, until the matter will not, on being stirred, any longer fume. If this part of the process be duly conducted, the antimony will appear in an uniform powder, without any lumps, and of a grey colour.

With this powder, fill two-thirds of a crucible, which is to be covered with a tile, and placed in a wind furnace. Gradually increase the heat until the calx be in perfect fusion, when it is to be occasionally examined by dipping a clean iron wire in it. If the matter which adheres to the end of the wire appears smooth and equally transparent, the vitrification is completed, and the glass may be poured out on a hot smooth stone or copper plate, and suffered to cool slowly, to prevent its cracking and flying in pieces It is of a transparent yellowish red colour.

Cerated Glass of Antimony.

Take of yellow wax, a drachm; glass of antimony, reduced into a powder, one ounce. Melt the wax in an iron vessel, and throw into it powdered glass; keep the mixture over a gentle fire for half an hour, continually stirring it; then pour it out upon paper, and when cold, grind it into powder. The glass melts in the wax with a very gentle heat. After it has been about twenty minutes on the fire, it begins to change its colour, and in ten minutes more, comes near to that of Scotch snuff, which is a mark of its being sufficiently prepared. The above quantity loses a about drachm of its weight in the process.

In the human subject, this medicine was for some time much esteemed in dysenteries. The dose given is from two or three grains to twenty, according to the age and strength of the patient.

The foregoing are the different preparations of antimony, but the two that are most useful in veterinary medicine, are the butter of antimony and the emetic tartar. The first is an excellent and safe escharotic, and the last is a useful diaphoretic, and is given with the best effect in all inflammatory complaints, especially in inflammation of the lungs.

CLYSTERS

Serve not only to evacuate the contents of the intestines, but also to convey very powerful medicines into the system, when perhaps it is not practicable to

do it by the mouth; for although clysters are only conveyed into the larger intestines, and, perhaps, hardly penetrate into the smaller, still they are extremely useful by fomenting, as it were, the latter, and at the same time by softening the hardened excrement that is accumulated in the former, and rendering it so soft as to be expelled out of the body, by which flatulencies, or other offending matters that may be pent up in them, are likewise expelled; besides, by their warmth and relaxing powers, they act as a fomentation to the bowels, and hence may be of considerable service in removing spasmodic constrictions in the bowels, carrying off flatulencies, and in preventing inflammation in the intestines; and by conveying opiates to the parts affected, give speedy relief to colics, &c.

The use of emollient clysters in fevers is considerable; they act by revulsion, and relieve the head when much affected; besides, by throwing in a quantity of diluting liquor in the intestines, it not only relaxes and cleanses them, but they may be said to cool the body in general; at the same time a considerable portion of the liquid is absorbed and conveyed into the mass of blood, by which means it is diluted, and in particular complaints of the bowels, clysters give almost immediate relief.

These remedies, when judiciously employed, pass directly to the parts affected, as they undergo little or no alteration from the powers of the body.

The diseases of horses are cured on nearly the same principle as those of the human body. The doctrines laid down by physicians for the cure of diseases in the latter are applicable to horses in similar circumstances; only it ought to be observed, for obvious reasons, that the intestines of horses should always be

emptied of dung by the repetition of clysters, which have something stimulating in their composition, previous to the administering any particular medicine by way of a clyster.

Nor is the use of clysters confined to medicines only; food and nourishment may be conveyed into the system in this, when a horse is unable to swallow any thing by the mouth This I have frequently experienced in practice, and I have supported horses for several days together by nourishing clysters made of thick water-gruel, during violent inflammations of the throat, until such time as they have been either discussed or suppurated.

The lacteal vessels, the mouths of which open into the inner cavity of the intestines, absorb, or drink up, the chyle or nourishment that is produced from the food that has been digested, and convey it into the mass of blood. The same process takes place when nourisnment is conveyed into the intestines by the auus, or fundament, only the food require to be so far prepared and broken down, and diluted with water, as to render it fit to be absorbed by the vessels mentioned above.

In administering clysters, it ought always to be observed, that the contents of the clyster be neither too hot nor too cold, and only milk-warm; as either of these extremes will surprise the horse, and cause him to eject or throw it out before it has had time to have any effect.

Previous to introducing the clyster-pipe, the operator, after anointing his hand and arm with oil, butter, or hog's-lard, (observing at the same time that the nails of his fingers are short,) may introduce it into the rectum and draw out the hardened dung gradually.

This operation in farriery, is termed *raking*, or *back-*

raking, and becomes the more necessary, as it frequently happens that great quantities of hardened dung are collected in the rectum, and which, in some cases, the horse cannot void easily without assistance of this kind. The composition of clysters should be extremely simple. On that account they will be easily prepared, and as easily administered, if the operator is provided with a suitable instrument for the purpose. The generality of clyster-pipes that are commonly used, are by far too short and too small.

Although it may appear a paradox, yet it is a fact, that a clyster-pipe of a larger size than the ordinary ones, and of a proper thickness, is much easier introduced into the anus than one that is considerably smaller. It is likewise obvious, that when the pipe is too short, it renders clysters of no use, because it cannot convey them so far into the intestines as is necessary to give them any chance of being retained; a small short pipe of six or eight inches long, is not capable of conveying the injection to the end of the rectum, which in a horse of middle size, is about seventeen or eighteen inches long.

In giving injections with these short pipes, the clyster is apt to flow out at the anus in proportion to the force with which it is injected from the bag, or syringe, and this must always be the case, especially if the horse's bladder should happen at the same time to be full of urine, which frequently occurs from its being retained there by the hardened dung in the rectum, which presses against the neck of the bladder, and thus prevents the horse from staling.

It happens, further, that after the hardened dung is taken out of the rectum by the operation abovementioned, the bladder, being distended, and full of urine, cannot exert its contracting power imme-

diately so as to expel its contents. It therefore presses up the empty rectum and forms, as it were, a kind of tumour in it; and if the pipe is too short, it cannot reach beyond this rising in the rectum, which forms, as it were, a declivity back towards the anus; and hence the liquor flows back as soon as it is discharged from the pipe, instead of passing forward.

The smallness of the bag, or bladder, containing the clyster, which is generally proportioned to that of the pipe, is another very material objection to this small apparatus, as it seldom contains one quart of liquid, from which circumstance very little benefit can be derived from the use of clysters in such large intestines as those of a horse.

Bracken, in his first volume, has this very judicious remark on the use of clysters. He observes that the colon of a horse seems to be three guts, by reason of the two necks of about half a yard each drawn up into many cells, or purses, by means of two ligaments; one of which runs along the upper, and the other the under side of it; which, with the assistance of a valve or flap at its beginning, hinder the excrements either from returning back into the small guts, or falling too soon downward, before the chyle prepared from the food be taken into its proper vessels. And, indeed, the caccum or blind gut, which is the first of three larger guts, seems to be so contrived, in the manner of a valve, to hinder the aliment and chyle from passing too soon into the colon; for if the aliment and chyle were not somewhat hindered in their passage through these large guts, the body could not be sufficiently supplied with nourishment.

The first of these colons is about a yard and a half long; the second about a yard; and the third, or that part which joins the rectum, near six yards in length,

so that the colon of a horse fourteen hands high, may be said to be nearly eight yards and a half long; and from it, along the rectum or straight gut to the anus, where the excrements are discharged, is not above half a yard; so that it is plain that clysters operate mostly in the colon, though generally they are given in too small quantities; for of what use are two quarts of liquor in a gut of nine yards long, and four or five inches in diameter in a natural state? but when in a colic, it is so distended with flatulencies that its diameter exceeds seven or eight inches, as Mr. Clark observed in those who have died of that distemper.

Large metal syringes are frequently used for the purpose of giving clysters; but of all the instruments ever invented, Mr. Clark thinks these are the most improper for horses.

The shortness and smallness of their ivory pipes are not only a material objection, as has been observed, but they are apt to tear and wound the gut; for if a horse should prove restless, either from pain, as in cases of the gripes, or from viciousness, the syringe and pipe being quite inflexible in the struggle to throw up the injection, the gut may be wounded, by which a discharge of blood and other bad consequences may follow.

But although there were not the least chance of either hurting the horse, or wounding the gut, yet the force with which they throw up the liquor always causes a surprise, and of course a resistance, attended with a vigorous effort to throw it back; which indeed frequently happens before the pipe of the syringe is withdrawn.

The instrument which Mr. Clark prefers for the purpose of giving clysters, is a simple bag, or ox-bladder, which will hold two or three quarts, tied to

the end of a wooden pipe about fourteen or fifteen inches long, one inch and a half diameter where the pipe is tied, and becoming gradually taper to the extremity, where the thickness should suddenly increase and be rounded off at the point as smooth as possible.

The hole through the pipe may be made sufficiently large so as to admit the end of a common funnel for pouring the liquor into the bag. By the flexibility of the bladder at the end of this instrument no danger can happen to the horse, whilst the clyster is conveyed so far up into the intestines that it will be retained. It causes no surprise (provided the liquor be neither too hot nor too cold, but of the same warmth as the intestines themselves,) as no other force is required to throw it up than the holding the bag a little higher than the level of the pipe, by which means the liquor flows gently into the gut without occasioning any surprise to the horse. After using the bag it may be blown full of wind, a cork put into the pipe, and hung up in some dry place to prevent it from rotting, by which means it will be fit for use on future occasions.

Clysters are distinguished by different names, which denominate the quality of the ingredients of which they are composed, as emollient, laxative, diuretic, anodyne, &c.

As the more general use of clysters in the practice of farriery would be attended with the most salutary effects, especially in acute diseases, where the speediest assistance is necessary, Mr. Clark subjoins the following forms for composing them, together with the cases in which they may be administered with advantage :—

Emollient Clyster.

Take of thin Gruel - -	2 or 3 quarts.
Olive Oil - - - -	6 ounces.
Coarse Sugar - - -	6 ounces.

Dissolve the sugar in the water-gruel, and then add the olive oil.

Laxative Clyster.

Thin Water Gruel - -	2 or 3 quarts.
Glauber's Salts - - -	8 ounces.
Olive Oil - - - -	6 ounces.

When Glaubers salts are not at hand, common salt may be used in the stead.

A great variety of recipes might be added for making clysters, composed of the infusion of different herbs, seeds, &c.; but as the above ingredients are always easily got, they will be found to answer all the intentions under this head, which is to soften the hardened excrement, to lubricate the intestines, and by exciting a gentle stimulus, promote a free discharge of their contents, which, when once obtained, seldom fail of giving relief in inflammatory cases, spasms, &c.

Purging Clyster.

Senna - - - -	2 ounces.
Boiling Water - - -	2 quarts.

Infuse the Senna, and having strained off the liquor, add syrup of buckthorn and common oil, each four ounces.

This clyster will operate more briskly than the former, and on that account may be preferred when an immediate or speedy discharge is necessary.

Anodyne Clyster.

Take of the jelly of common starch, or of an infusion of linseed, one pint.

Tincture of opium, one ounce, or about two tablespoonsful.

When there is reason to apprehend inflammation of the bowels, solid opium may be given instead of tincture, from twenty to thirty grains, in proportion to the urgency of the symptoms. It ought, however, to be well rubbed in a mortar, with a little of the liquid, until it is thoroughly dissolved. The smallness of the quantity of the liquid here recommended gives the better chance of being the longer retained, as the good effects derived from the opium depend entirely on this circumstance.

This clyster is proper to be given in violent gripings, attended with purging, in order to blunt the sharpness of the corroding humour, and to allay the pain usual in such cases.

The starch will also in some measure supply the deficiency of the natural mucus, or covering of the intestines, which has been carried off by violent purging. It may be repeated if the symptoms continue violent, only diminishing the quantity of laudanum, or of the opium.

Nutritive Clyster.

Take of thick gruel, well boiled, three quarts. When nourishing clysters are found necessary, they may be given four or five times a day, according as circumstances may require. They are of considerable service in cases where the horse cannot eat sufficiently to support himself, nor swallow any thing from inflammation in the throat, jaws, &c., or from convulsions, attended with locked-jaw, &c.

Perhaps milk-gruel might be substituted with advantage.

Diuretic Clyster.

Take—

Venice Turpentine - - -	2 ounces.
Castile Soap - - -	1 ounce.

Dissolve the soap in two quarts of warm water, then add the turpentine, previously well beaten up with the yolks of two eggs.

This diuretic is of great use in strangury, and in obstructions of the urinary passages.

As it is immediately applied to the parts affected, it seldom fails of giving relief, and has a much better effect when prescribed in this manner than when given by the mouth, because it then mixes with the whole mass of fluids, and may lose a considerable portion of its diuretic quality before it reaches the kidnies; but by being administered in the form of a clyster, it is readily absorbed by the neighbouring vessels, and promotes a free discharge of urine.

It is unnecessary to multiply formulæ for clys-

ters, as the following is perhaps the best that can be adopted, viz.,

Epsom Salts - - - -	4 ounces.
Thin Gruel - - - -	4 quarts.

Mr. Clark of Edinburgh observes that there are many cases where clysters may be administered with great success, besides those already hinted at, as in inflammatory fevers, spasmodic constrictions, and colicky complaints in the bowels, in recent coughs, apoplexy, convulsions, paralytic complaints, swelling of the belly, whether from air or from hardened excrements.

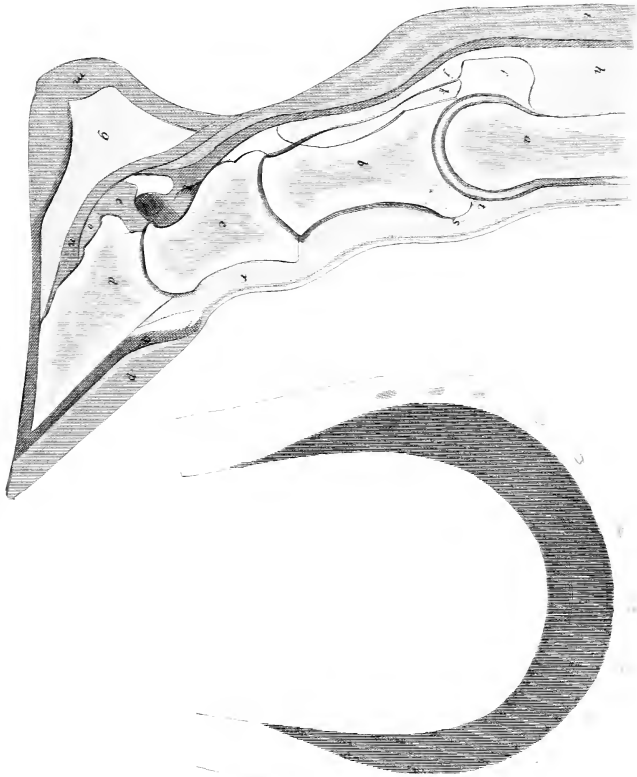
They are required also in cases where horses are troubled with worms, as the ascarides, which lodge in the lower part of the intestines, or where bots are observed sticking in the anus, or voided in the dung; in very costive habits, before laxative or opening medicines are given by the mouth; in wounds which penetrate deep into the muscular or tendinous parts, or in the belly, &c.; in inflammation of the eyes, or when the head seems particularly affected; in inflammatory swellings on any part of the body. Clysters composed of mucilaginous substances, as starch, linseed, &c., are also of great benefit in cases of violent diarrhœa, whether proceeding from natural causes, or from too strong purging medicines given by ignorant farriers.

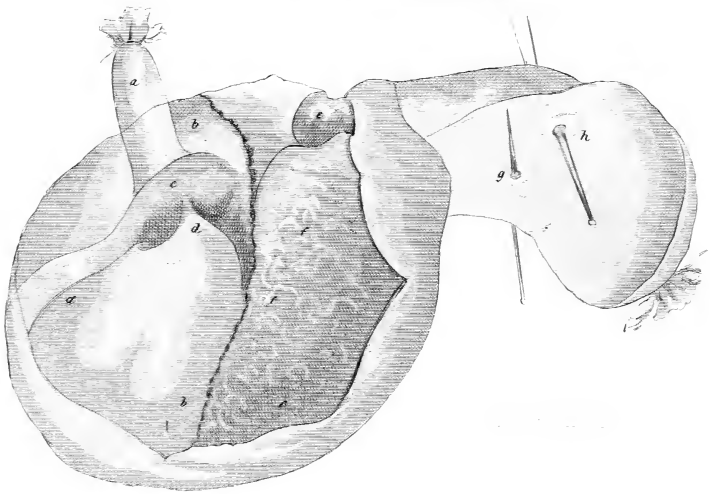
It ought always to be remembered, that clysters should be repeated frequently, till such time as the disorder for which they are given is either removed or greatly relieved. This injunction may be the more readily complied with, as the administering clysters to horses is not attended with either much trouble to the operator or disturbance to them

It frequently happens in colics and other complaints

in the bowels, that a horse will dung frequently, probably from pain, &c., but in a very small quantity at once. At the same time what he passes may appear somewhat soft or loose.

In such cases, the practitioners may perhaps be told by the byestanders, that clysters are unnecessary and superfluous; this, however, ought not to prevent him from prescribing them; as in such cases, the flatulencies which occasion the disorder may be seated in the colon, where the excrements at the same time are extremely hardened; and it frequently happens that after the second or third injection, they are discharged in such a quantity, and in such a state, as to surprise those who were just before opposing and deriding the practice recommended. These prejudices every practitioner will have to combat, for he will frequently have as troublesome nurses to deal with as the physicians sometimes complain of, and who are no less ready with their impertinent advice.

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THE STOMACH OF THE HORSE

Is, as well as in all other animals, an organ of the first importance. In the horse it differs from most other grazing quadrupeds, as it consists of one pouch, or bag only, whereas in those that ruminate, or chew the cud, it is generally divided into four compartments.

In its shape it somewhat resembles a bag-pipe, but is larger on the left side than on the right. Its magnitude is, generally speaking, in proportion to the size of the horse; although it is small when compared with that of other animals.

It is furnished with three coats, the outermost of which is the peritoneum; the second is muscular and fleshy; and the last a continuation of the innermost coat of the æsophagus, or gullet, which goes from the mouth to the stomach and begins at the root of the tongue, behind the head of the windpipe. At that part where it enters the stomach, it is composed of a pretty thick substance, made up of circular and fleshy fibres, by which it contracts and dilates. This is called the left or upper orifice of the stomach, and that whereby it discharges itself into the duodenum is its right or lower orifice.

A great part of the stomach of the horse is insensible, in consequence of a cuticular covering, and differs of course from the villous portion of that viscus.

This insensibility prevents irritation from hard food. The æsophagus or gullet, is constantly, unless at the time of swallowing, drawn into longitudinal folds. This contraction prevents any return of the food, and also precludes the possibility of vomiting, from its acting as a valve against any substance that might be re-

jected by the stomach. Vomiting indeed would produce suffocation in a horse, as owing to the peculiar structure of the superior portion of the pharynx, the food which was thrown up must necessarily drop into the trachea, or windpipe.

That part of the stomach which is not lined by cuticular membrane is extremely vascular. It occupies the posterior part, and is of the greatest importance to the animal economy.

The gastrica denter and sinister are continued in this membrane. Its surface is glandular, and it secretes the gastric juice. This juice is the principle agent in digestion, and acts alike upon all animal and vegetable substances that are taken into the stomach, and is so powerful as even to consume a part of the stomach itself after death. The mass which is produced by the action of the gastric juice generates a fluid, which is called chyle, and which is always the same in its quality, notwithstanding it may arise from a great variety of food.

The gastric juice coagulates milk, and it must undergo this process in the stomach before it can be digested; yet the gastric juice has no effect on animal substances that are alive, and this accounts for the circumstance of bots living in the stomach of the horse.

These insects attach themselves very firmly to the cuticle of the stomach, or the insensible part, by two hooks situated near the tail. In this situation they occasion little or no inconvenience to the animal. These insects appear to be insensible to pain, as even the most caustic and stimulating medicines will not dislodge them.

This may in part arise from their bodies being covered by a kind of hairy spiculæ which prevents

any fluid entering into contact with the surface. Very few horses are free from bots at a certain part of the year, and it appears as if the stomach had been destined as the receptacle and support of those animals.

Mr. Bracey Clarke has lately published a very elaborate and satisfactory treatise on the different species of bots which infest not only horses, but cows, deer, and sheep.

According to his experiments, it appears that the fly depositing its eggs in the fundament of the horse is both erroneous and absurd, and indeed it appears extraordinary how the insect could afterwards make its way into the stomach through the intestines, and that too in opposition to their peristaltic motion.

The reader will find both amusement and information in this valuable work of Mr. B. Clarke's.

The stomach of the horse is liable to inflammation, yet not so much so, perhaps, as that of the human being.

Inflammation of this organ is attended with extreme pain, the pulse is hard, the patient thirsty, he lies down and looks constantly towards the part affected. In this case large quantities of either solids or fluids are injurious.

Bleeding should be practised to a considerable quantity, and the external surface of the belly should be stimulated by rowels or blisters.

The surface of the body should be kept warmly clothed. Sheep and oxen are subject to a preternatural distension of the paunch, from taking in too large a quantity of food. If not soon relieved death ensues. Fermentation takes place, and a considerable quantity of air is generated, which materially increases the disease.

With a view to giving relief, it is sometimes the practice to pierce with a knife, or some other sharp instrument, into the stomach, between the last rib and the hip-bone. As soon as the orifice is thus made, the inclosed air rushes out, and the muscular action of the stomach being restored, the animal is instantly relieved.

Sometimes, however, a part of the food is forced out along with the air, which, if it enters between the stomach and the cavity of the belly, acts as an extraneous body, and produces an irritation and inflammation which generally proves fatal.

Dr. Munro recommended the introduction of a flexible tube through the mouth into the stomach, but it has not been much adopted, as the country people generally prefer the summary method of piercing into the stomach.

The stomach in the human being is affected by sympathy from complaints in other parts, such as gout, &c.; but it is doubtful whether the horse is ever affected in the same way. This may, perhaps, arise from so small a portion of the stomach being vascular and endued with sensibility, and also from secreting a little gastric juice. It is not an easy matter to produce nausea in a horse. Hellebore an aconitum, to the quantity of half a drachm, it is said will bring on efforts to vomit.

Four ounces of emetic tartar have been given without exciting nausea.

Cerussa acetata, to the amount of half a pound, has been given without any perceptible effect, and the same experiment has been made with aquia lithary. acet. in a proportionate degree.

Jalap and bitter apple has been given in large doses without any obvious consequences.

Corrosive sublimate has been also administered from fourteen grains to three drachms and a half. From this last quantity inflammation arose in the stomach, and coagulable lymph was thrown out.

Calomel purges and irritates the superior part of the pharynx and the mouth, but do not seem to effect the salivary glands. There is, however, considerable danger in using it in large quantities.

Opium may be given in very large doses. Four ounces have been administered at a time.

Tobacco in every form has been employed, even an infusion of three pounds has been introduced into the stomach without effect.

Vitriolated zinc acts as a tonic when used in moderate quanties: the dose may gradually be increased to half an ounce.

The lacteals take up a fluid, called chyle, and convey it through the lympatic glands, where it seems to undergo some change, into the thoracic duct; from thence they proceed in the horse to the left jugular vein, but in the human to the left subslavian. This process renews the blood after its various losses. It has been doubted whether the absorbents take up the chyle by capillary attraction, or by some voluntary action of their own.

Having gone thus far into the animal economy of the stomach of the horse it will not be irrelevant to offer a few remarks on the general system and consequences of administering medicines in disease. That this is often done unnecessarily, and, of course, mischievously, has been very ably shown by Mr. Clark of Edinburgh.

"If," saye he, "a man or horse be in a state of health, what more is required, or how can they be rendered better? Health is the more proper state of

the animal body, and it is not in the power of medicine either to make it better, or to preserve it in the same state.

A good medicine, given seasonably, when there is an appearance of some latent disorder, or some derangement of the body, which would, in a short time, occasion its breaking out, may prevent it from taking place by carrying it off.

The same medicine given in health, will produce an alteration in the system by increasing or diminishing some of the natural secretions, or disturbing the animal functions; or even allowing that it did not produce any of these changes, still it leaves the body just as liable to disease as before. Besides, the custom of giving medicine too frequently is a bad one; they become in time habitual to the constitution, which circumstance renders them totally inefficacious when necessary, or at least it greatly reduces their effects.

The medicines commonly administered to horses by way of preventives, are generally composed of aromatics, spices, &c., under the denomination of cordials. These are said to heat and invigorate the stomach, and thereby promote digestion. But if a horse is otherwise in health, this desirable end is brought about in a much more natural way by proportioning the food to the labour which the horse undergoes.

Other medicines are given to horses in health, under the title of alteratives, which are totally unnecessary, except the animal be in a state of disease. These alteratives are supposed to change the humours or juices of an animal body from a morbid or diseased state o that of health.

They have no immediate perceptible effect, but gain gradually on the constitution, and are followed (if the viscera are sound,) with the most salutary effects, by

increasing the natural secretions. But in this case a disease is implied, and of course such things may be necessary and proper. Thus, antimony in its different preparations, mercury, sulphur, aloes, and salts, are alternative remedies.

The former of these, especially the coarser kind, are generally given too frequently, in too great quantities, and in too gross a state, which sometimes brings on great sickness or violent purging; and in some constitutions, instead of promoting the secretions by the skin, they occasion a great heat and dryness, which is frequently succeeded by the appearance of hard lumps or blotches on different parts of the body.

Mr. Clarke says, " that sulphur not only opens the body, but readily makes its way through the pores of the skin, and therefore should be used with caution, as horses are very apt to catch cold on too liberal an use of it."

Aloes given in small quantities, by way of an alternative, and too frequently repeated, weakens the stomach and bowels so as to bring on a lax, or what is called a washy habit of body; it ought, therefore, to be given only to horses of a robust constitution and newly taken from late grass, or that have been accustomed to foul feeding, as grains, chaff, &c.

The neutral salts, especially nitre or common salt, are the best and safest alternatives that can be given to horses. They seem to agree with the constitution, and have this advantage, that they require no clothing or confinement, nor is the free use of them attended with disadvantage.

But it would be absurd to prescribe even these without some apparent cause.

Nitre is of great service in all inflammatory complaints; it not only allays the great heat of the blood,

but promotes the natural secretions, particularly that of urine, and is one of the best and safest medicines that can be given to horses on such occasions.

Common salt given to horses which do not appear to thrive when there are no symptoms of an inflammatory disease, has a very good effect; it promotes digestion and the natural secretions, it makes them take on flesh and coat well.

Antimony is useful as an alterative, but the coarser kind is ill prepared, and frequently as injudiciously prescribed.

If coarse and black like gunpowder, it should always be rejected.

The best is ponderous, and composed of long shining needles, and this, if levigated into fine powder, may be given with safety.

Medicines exhibited in disease also require caution and discrimination. In speaking of the treatment of sick horses, Mr. Clark says—

"It is amazing what different kinds of compositions are forced down horses' throats on these occasions, of which the following is a striking instance :—

"A gentleman in London was greatly prejudiced in favour of vinegar as a cure in many diseases. His favourite horse was taken ill in very warm weather, and as he thought vinegar was a very cooling thing, he ordered a pint to be given to his horse at once.

"It was no sooner swallowed than the horse lay down, stretched himself out, and died. Unluckily the nature of the horse's complaint was not known, as the owner would not suffer him to be opened. As I never knew or heard of any other instance," continues Mr. Clark, "where such a quantity of vinegar was given at one time, I cannot take upon myself to say what effects it may produce, but it is very probable in the

instance just mentioned the coats of the stomach had been inflamed, and in that case the sudden application of such a powerful astringent as vinegar, was very likely to cause immediate death."

When horses are ill, it is too common a practice to mix medicines, such as nitre, in their water. The disagreeable taste thus given to the water prevents them from drinking, and hence they suffer considerably for want of fluids to quench their thirst, and to promote the necessary secretions of urine. On the contrary, every means should be tried to tempt horses to drink freely in such cases, and sometimes it may be forced down their throats with a horn; for as most of the diseases to which horses are subject are of an inflammatory kind, and the thinner parts of their fluids are carried off by the strong perspiration they are exposed to from the nature of their exercise, whenever they are seized with acute diseases, their fluids are then more disposed to be thick, viscid, and inflammatory; therefore as water is the principal diluter of the fluids in general, in such cases a considerable quantity of it at this time becomes highly necessary, and in some cases may be the best medicine that can be given them.

In cases when horses refuse warm water, it may be given cold without much danger, by first mixing a little oatmeal with it and giving it in a small quantity at a time.

There is also a great difference in the wholesomeness of food, both in regard to hay and oats; and from all these circumstances, the animal incurs a greater risk of being disordered than when he remains in the fields in this natural state.

THE ACHIEVEMENTS OF THE HORSE.

This noble and useful animal is highly distinguished for docility and sagacity. His attachment to his master is frequently both warm and dignified. He is proud, and delights in gaudy trappings; and it has been remarked, that horses used in hearses often shake their plumes with a supercilious air. On account of the strength, valour, and utility of this animal, he was formerly an object of adoration, having been worshipped by ancient kings.

The true bred blood horse has performed a variety of feats which no other class of his species can equal. The English racer, as before observed, is derived from Arabian progenitors. The following warrantry of the pedigree of a horse, brought from Egypt by Colonel Ainsley, is curious, and shows the scrupulosity and precaution of the Arabian breeders.

"In the name of God the merciful and compassionate, and of Seed Mahommed, agent of the high God, and of the companions of Mahommed and Jerusalem. Praised be the Lord, the omnipotent Creator. This is a high bred horse, and its colt's tooth is here in a bag, hung about his neck, with his pedigree, and of undoubted authority, such as no infidel can refuse to believe. He is the son of Rabbamy, out of the dam Lahahdahah, and equal in power to his sire, of the tribe of Zazahalah; he is finely moulded, and made for running like an ostrich, and great in his stroke and his cover. In the honours of relationship, he reckons Zalicah, sire of Mahat, sire of Kellac, and the unique Alket, sire of Manasseh, sire of Alsheh, father of the race down to the famous horse, the sire of Lahalala. And to him be ever abundance of green meat and corn,

and water of life, as a reward from the tribe of Zazahalah, for the fire of his cover; and may a thousand branches shade his carcase from the hyæna of the tomb, and the howling wolf of the desert: and let the tribe of Zazahalah present him with a festival within an enclosure of walls; and let thousands assemble at the rising of the sun, in troops hastily, where the tribe holds up under a canopy of celestial signs, within the walls, the saddle with the name and family of the possessor. Then let them strike their hands with a noise incessantly, and pray to God for immunity for the tribe of Zoab, the inspired tribe."

"It is a circumstance generally known," says Mr. W. H. Scott, "that bred, or race-horses, from the solidity of their bones, and some peculiar intrinsic force of power in their muscular and fibrous systems, are capable of carrying, and with expedition, far heavier weights in proportion than the northern or native horses of Europe. And I have seen the late Mr. Bullock, then riding nearly or altogether twenty stone, cantering over the London pavements upon a little thorough-bred horse, under fourteen hands in height, and which, to common observers, was not equal to more than half the weight. Was a thirty stone plate to be run for, at twenty mile heats, the prize would be carried off by thorough-bred horses, of which we have always in this country possessed some of great size and powers. I was not, however, aware that the power of standing under the greatest weight, between the racer and the common horse, had ever been actually put to the test, until I lately read the following curious evidence of the fact in a letter from the Rev. William Chafin to a friend:—

"Captain Vernon, some time after Amelia was out

of training, laid a very considerable wager, that she bore a greater weight upon her back, without cringing, than a certain miller's horse, which had been used to carry heavy sacks all his lifetime. The mare and the horse were placed side by side on the even ground, and bags of different sizes, (whether of corn or sand I know not, but I believe the latter,) were placed on their backs with great precaution. The mare never moved; but after immense weight had been placed on both, the horse began to sidle, and before the last bag could be put on him, he sunk on his knees; it was put on the mare, and she bore it, never moving her posture until she was unloaded. An immense sum of money was lost and won in this trial."

Amelia raced, I believe, about sixty or seventy years ago; was the best mare of her year, and a great winner at Newmarket; and Mr. Chafin had the above account, about a week after the trial had been made, from the father of the present Sir John Lade, an eye-witness. The particulars are in all probability to be found in one of Cheney's, that is to say, the earliest Racing Calendars; but such experiments by no means deserve the countenance of sportsmen, being in their very nature barbarous, and almost unavoidably likely to be productive of irreparable injury to the victims of them. There is a deception in the appearance of the bred horse, particularly in the bone, which, from the fineness of the skin, and smoothness of the hair, does not show bulk so prominently as the bone of the horse of a coarser breed; and there are many cart-horses which cannot stand in competition with some of our racers for size of the leg bone below the knee. Sampson, the sire of Bay Malton, measured eight inches and a half round the smallest part of his

fore-leg, and nine inches round the same part of his hinder-leg."

The Darley Arabian, standing at the head of our racing pedigrees, was, according to scattered remnants of tradition, a horse of good substance, finely formed, inclining to the deep or blood bay, and nearly or altogether fifteen hands in height. He was sent from Aleppo, perhaps towards the end of queen Anne's reign, by Mr. Darley, of a sporting family in Yorkshire, at that period a mercantile agent in the east, and belonging to a hunting club at Aleppo, where he made interest to purchase this horse, doubtless, from all concurring circumstances of evidence, a real *Courser of the Desert*, and of the ancient and pure blood. He was kept by Mr. Darley as a private stallion, covering very few mares but those of his proprietor: indeed as Arabians had been long out of repute in the English breeding studs, such consequence was to be expected, and a variety of the best bred mares of the country were not annually poured in upon him, as afterwards, in consequence of his great success, upon the Godolphin Arabian. His first get, however, was a true and successful racer; and from this Arabian have descended the speediest and largest coursers that ever outstripped the winds, in striding and springing over the earth. Flying Childers and Eclipse, the swiftest of quadrupeds, were the son and great grandson of this stallion, from which also, through Childers and Blaze, descended Sampson, the most powerful horse which ever raced, whether before or since his time; of first-rate speed as a racer, and in form entitled to equal pre-eminence as a hunter, hack, or coach-horse. The Darley Arabian was the sire of Flying, or the Devonshire Childers, Bleeding or Bartlet's Childers, Almanzor, Whitelegs, Cupid, Brisk, Dædalus, Skip-

jack, Manica, Aleppo, Bullyrock, Whistlejacket, Dart, and others, some of them out of mares of no great repute.

Flying Childers was bred by Leonard Childers, Esq. of Carr House, Doncaster, and sold to the Duke of Devonshire at three years old; and according to a cotemporary writer, his grace afterwards refused for the horse his weight in silver, which probably would have amounted to five or six thousand pounds, a vast sum for a horse at that time. He was said to be vicious, which seems to be indicated by his countenance and manner, according to his portrait; and, like Eclipse, he was a resolute and headstrong horse. No horse in his time could run within a distance of him over the course. In form, he was short-backed and compact, his length to a considerable degree being made up in his legs, not, according to general estimation, the most advantageous shape for a race-horse; but Childers was a horse above ordinances, superior to the ordinary rules of form, by which others of his species seem to be bound: there do not appear in his portrait that depth and slant of shoulder which we have seen in Eclipse. Childers probably did not race until six years old, and never any where but at Newmarket; and there is an old and probable tradition current in Yorkshire, that his extraordinary speed and powers wer first discovered at a severe fox-chase, in which all other horses in the field were knocked up. In colour he was bay, with white upon his nose, and whited all fours, namely, upon his pasterns, the white reaching highest upon his near fore-leg and his hinder-leg. His head, although well joined to his neck, and his muzzle fine, was rather thick over the jowl. He was foaled in 1715, and his pedigree is as follows:—

Son of the Darley Arabian out of Betty Leedes, by old Careless; grandam, own sister to Leedes, by Leedes' Arabian, which was the sire of Leedes; great grandam by Spanker, out of the old Morocco mare, Spanker's own dam. Old Careless, sire of the dam of Childers, was got by Spanker out of a Barb mare. Spanker was almost all Barb. Thus we see the pedigree of Childers runs very much *in and in*, that is, his progenitors were bred from the nearest affinities. Never was there a more complete racing pedigree, all the progenitors, to the last, having proved their blood by successful racing or breeding racers, and all of the best blood, Arabian or Barb. In October, 1722, Childers beat Lord Drogheda's Chaunter, previously the best horse of the day, six miles, ten stone each, for one thousand guineas. He had already, at six years old, ran a trial against Almanzor, and the Du e of Rutland's Brown Betty, nine stone two pounds each, over the round course at Newmarket, thr e miles, six furlongs, and ninety-three yards, which distance he ran in six minutes and forty seconds; to perform which he must have moved eighty-two feet and a half in one second of time, or nearly after the rate of one mile in a minute; the greatest degree of velocity which any horse has ever shown, or probably ever will. He likewise ran over the Beacon course, four miles, one furlong, one hundred and thirty-eight yards, in seven minutes and thirty seconds, covering at each bound a space of twenty-five feet. He leaped ten yards on the level ground, with the rider on his back.

The Godolphin Arabian was about fifteen hands in height, with good bone and substance; in colour a brown bay, mottled on the buttocks and crest, but with no white, excepting a small streak upon the

hinder heels. All the old engravings give him the high and swelling crest which has been so much noticed in Stubs's picture; there is also the same sinking behind his withers, and assinine elevation of the spine towards the loins. His muzzle was so remarkably fine, that he might well (a favourite idea of the old jockeys,) have drank out of a tumbler. He was truly snake-headed, which is to say, his head was perfectly well set on. His capacious shoulders were in the true declining position, quarters well spread; and of every part materially contributory to action, nature had allowed him an ample measure; in his *tout ensemble* there appears the express image of a wild animal, or horse of the desert, and of one at the first view perfectly adapted from his form to get racers. He was sent to France, from some capital or royal stud in Barbary, probably from Morocco; and it was suspected he was stolen; but so little valued, that he was actually used to draw a cart in the streets of Paris. It is not known that he had any pedigree, but a notice was sent over with him that he was foaled in the year 1724, most probably in Barbary.

This horse was not imported by Mr. Coke, as has been supposed, from Barbary, but from France. Mr. Coke gave him to Mr. Williams, master of St. James's coffee-house, who presented him to the Earl of Godolphin. Being most likely out of condition, and not showing himself to advantage, he was kept on the noble Earl's stud as teaser to Hobgoblin, during the years 1730 and 1731, when that stallion refusing to cover Roxana, she was served by the Arabian, and the produce was a colt foal, afterwards named Lath, which proved not only a most elegant and beautiful horse, but the best racer which had appeared upon the turf since Flying Childers. The

Arabian covered during the remainder of his life, in the same stud, producing yearly a succession of prodigies of the species. He died in 1753, in his twenty-ninth year, and his remains were deposited in a covered passage leading to the stable, a flat, thankless stone, bare of any inscription, being placed over him.

The following famous racers, some of which were of great size and power, besides many others of inferior note, with a great number of capital racing and blood mares, descended from the Godolphin Arabian:—Lath, Cade, Regulus, Babram, Blank, Dismal, Bajazet, Tamerlane, Tarquin, Phœnix, Slug, Blossom, Dormouse, Skewball, Sultan, Old England, Noble, the Gower Stallion, Godolphin colt, Cripple, Entrance. The sums put in circulation by the numerous descendants of the above two racing stallions, have been immense.

Smolensko, the property of Sir Charles Bunbury, which, during his racing career, excited a greater share of the public curiosity than any of the most famous of his predecessors, in 1813 won the two great stakes in the Newmarket Spring Meetings, immediately afterwards the Derby Stakes at Epsom, and the Magna Charta Stakes at Egham in the following August. It was even betting for the Derby between Smolensko and the field; and an unfortunate gentleman, backing the field to a large amount, had not sufficient firmness of mind to bear up against the consequence of his own imprudence. A few days, however, before the race, a report getting abroad that the horse was lame, and he being seen without one of his shoes, Sir Charles Bunbury took and won five and six hundred pounds to ten, three times over. The betting soon returned to its former state. At this

time the newspapers were filled with Smolensko, and he was by them represented as the speediest horse which had appeared since Eclipse, and ' unlike Eclipse only in his coolness and want of driving.' All the world went to Epsom to witness the performance of this new Eclipse. On his return to London, he was ordered from Tattersall's for the inspection of his royal highness the Regent. Many persons were desirous of purchasing this horse, and there seems no doubt that four or five thousand pounds might have been obtained, had the proprietor been desirous to part with him. On the approach of the Egham meeting, the public papers were again full of Smolensko, and a turnpike-man upon the road declared, that in twenty years, he had not seen such crowds pass his gate of carriage company, horse, and foot, the latter of all descriptions, and all for the purpose of getting a sight of the famous black horse. Many had come eighteen or twenty miles on foot, returning through the gate till two o'clock in the morning. Crowds gathered round him on the course, and he was then exhibited to her majesty the queen and the princesses on the royal stand. A man actually offered Sir Charles Bunbury two hundred pounds for the use of his horse to make a show of; and there is no doubt but that Sir Charles, could he have done such a thing, might have made five hundred pounds by exhibiting him in London! Among the curious tattle at Egham, on the subject of this wonderful horse, it went about that the day before the race he had been stinted of his meat and water, according to the old system; most probably a *hoax* of the groom, by way of answer to some sage inquiry: it however reached the ears of Sir Charles, who remarked to his informant, that should a servant of his make so gross a breach of his orders, ' he would never eat any

more of his beef and pudding.' It was reported Sir Charles challenged all England, offering to take four pounds, and run his horse against any horse of his year, his horse not to take a sweat. Smolensko was one of the healthiest, quietest, and best tempered horses that ever was trained. He was about sixteen hands and a half high, full brother to Thunderbolt, got by Sorcerer, a son of Trumpeter, and his pedigree is filled with our oldest and highest racing blood.

Goldfinch, by Lop, the property of John Turner, Esq., acquired great celebrity as a hunter in the Mershem or Joliffe Hunt. Sharke, got by Marsk, his dam by Snap, grand-dam by Marlborough, brother to Babraham, out of a natural Barb mare, was renowned for his performances, which were deemed greater than any other horse's in England. At three years old he beat Postmaster for five hundred guineas: he received from Prior two hundred guineas. He won from Jacinth three hundred guineas, at four years old (April 17, 1775); he won a sweepstakes, ten subscribers, two hundred guineas each; and another, thirteen subscribers, one hundred guineas and a hundred of claret each: also the Clermont cup, value one hundred and twenty guineas, and one hundred guineas each; and a sweepstakes, thirteen subscribers, twenty-five guineas each. He won five hundred guineas from Cincinnatus, and beat Johnny (six years old) for one thousand guineas, when five years old. He again beat Postmaster for one thousand guineas, and won a sweepstakes, three subscribers, one thousand guineas each He beat Rakes for one thousand guineas, and won of Leviathan five hundred guineas (July 8). He received from Critic one thousand guineas, from Johnny five hundred, and beat Fireaway for three hundred

guineas. At six years old, he walked over B. C. for one hundred and forty guineas: he received from Leviathan five hundred guineas, and again beat Leviathan for one thousand guineas, and Hephestion for five hundred guineas. He won ninety-two guineas for all ages when ten horses started. He received one hundred guineas compromise from Lord Grosvenor's Mambrino; and, when aged, he beat Nutcracker a mile.

Tramp, a bay horse, foaled in 1810, was bred by Richard Watt, Esq. of Bishop Burton, near Beverley, Yorkshire; got by Dick Andrews, and his dam (bred by Lord Egremont) by Gohanna, which was also the dam of Scamp. At Malton, April 6, 1813, Tramp won a sweepstakes of fifty guineas each, beating Mr. Grimstone's Dulcinea, by Sancho, and Sir M. M. Sykes's Diabolus; on the same day, he won a sweepstakes of twenty guineas each, (one mile and a half), beating Mr. Morris's Luna, by Stamford, and Mr. Dalrymple's Tomboy. At Beverley, June 2, he won a sweepstakes of twenty guineas each (one mile and a half) beating Mr. Harrison's Latona, Sir B. R. Graham's Bacchante, and Sir M. M. Sykes's br. c. by Sancho. At York spring meeting, 1814, he won the gold cup, value two hundred and twenty guineas, (three miles) beating Viscount (five years old), Shepherd's Boy (three years old), and Mexico (four years old). At Beverley, May 26, he won the gold cup, value one hundred and thirty guineas, (four miles) beating Woodman and Sir B. R. Graham's b. c. On the next day he beat Silston for fifty pounds. At York August meeting, he was beat with great difficulty for one of the great subscription purses by Prime Minister, but beat Hocuspocus and Cameleopard. At Pontefract, September 14, he won the gold cup, value

one hundred and twenty guineas, (four miles) beating X Y Z (six years old) and Marcianna (five years old). At Doncaster, September, he was beat for the Fitzwilliam Stakes by Catton, but beat Cossack, Ranger, and Fairville. This was one of the finest races ever seen, and won with the greatest difficulty. The next day he won the prince's stakes of twenty-five guineas each, with twenty-five guineas added, (six subscribers) beating Hocuspocus by Quiz, Molineux, by Hambletonian, Don Carlos, by Sir Charles, and Rodrigo, by Sancho; and on the following day he won the gold cup, value one hundred guineas and upwards, beating Lord Fitzwilliam's Cameleopard, Mr. Blake's Sprightly, and Sir W. Milner's Mamoune.

Tramp was beat twice when three years old, which, with the above, constituted the whole of his racing. The noted John Jackson rode him for all these races except the cup at Doncaster, when James Garbutt rode, owing to the former being above weight.

Viscount, got by Stamford, dam by Bordeaux, was bred by J. W. Childers, Esq., of Cantley, near Doncaster, Yorkshire, and foaled in 1809. In 1812, he won at Durham seventy pounds for all ages, three mile heats, at three heats, beating Heliantha, Ravedine, Query, and John Hutchinson. At Nottingham, he won the members' plate of fifty pounds, three years old colts, at three heats, one mile each, beating Tom Tit, Raspberry, and a colt by Orlando. At Pontefract he won the cup, value one hundred and sixty guineas, beating Don Julian, Biscuit, I'm-sure-he-shan't, and Euryalus. At Doncaster, he was purchased by Sir William Maxwell, for eight hundred guineas, and won the one hundred pounds for three years old, two mile heats, beating at three heats, Legerdemain, Skip, Hermit, Navigator, Fitz-Oliver, Kid,

Young Delpini, Wisdom, and Sir Hedworth. In 1813, at Catterick Bridge, he won a stakes of twenty guineas each, two miles, (eight subscribers) beating X Y Z, Rebecca, and Lord Belhaven's colt. At Durham, he won the cup, value one hundred and twenty guineas, three miles, beating X Y Z, Wrodman, Limblifter, Engraver, and Don Carlioso. At Stockton, he won the cup, value one hundred guineas, beating Macaroni. At Preston, he won the gold cup, value one hundred guineas, with two hundred guineas in specie, beating Catton, Uncle Dick, Manuella, and Cwrw. At Pontefract, he won the cup, value one hundred and forty guineas, beating X Y Z. At Doncaster, he won the prince's stakes, of twenty-five guineas each, with twenty-five guineas added, beating Langold. Next day he won the cup, value one hundred guineas and upwards, beating Marcianni, Fugitive, Amadis de Gaul, Oriani's brother, and Duke of Leedes b. c. In 1815, he won fifty guineas at the Caledonian hunt and Dumfries races, at two heats, three miles each, beating Surveyor, Arabella, and Drouthy Kate.

Viscount was a superior runner at four years old, till he met with an accident, which caused firing necessary, after which he lost his racing powers.

Langton was bred by John Grunston, Esq., of Neswick, near Beverley, Yorkshire, and foaled in 1802. He was got by Precipitate, and his dam (who also bred Alonzo, Charlotte, &c.) by Highflier. At Malton Craven Meeting, 1805, he won a sweepstakes of twenty guineas each, beating Truth, Sir Reginald, Laura, Norval, and two others. At Doncaster, he won one hundred pounds, beating at three heats, Master Betty, Cleveland, Young Chariot, Scampston, and Sir Andrew: he also received forfeit from Lord F. G. Osborne's Don Felix, and was sold to Mr. Howorth.

At Bibbury, 1806, he won a sweepstakes of twenty-five guineas each, with one hundred guineas added by the club, (nine subscribers) beating Pedestrian and Bagatella. At Oxford, he won the cup of eighty guineas, beating Quiz and Rumbo. Next day he won, at two heats, two miles each, fifty guineas, beating Pantaloon. At Egham, he won a stakes of twenty guineas each, (five subscribers) beating Candidate. At Newmarket Craven meeting, 1807, he won two hundred guineas, beating Rosebella. First spring meeting, fifty guineas, beating Charmer. Second spring meeting, he received one hundred guineas from Pagoda. Second October meeting, he received forfeit from Briscio, and was then sold to Lord Jersey. At Newmarket July meeting, 1808, he won fifty guineas, beating Ned. In the Houghton meeting, he won a stakes of one hundred guineas each, (three subscribers) beating Tot and Bramble. The same day he beat Romeo for fifty guineas. The next day he won fifty pounds, beating York, Prospero, Rambler, Cerberus, Pelissee, Hedley, Momentilla, Weaver, and another. In the July meeting, 1809, he received forfeit from Podagra. He won fifty pounds, beating Vanity and Norah. He received forfeit from Woodwill, that beat Juniper, for one hundred guineas, and received forfeit from Preek. In the Craven meeting, 1810, he won the third class of the Oatlands, (fourteen subscribers) beating Bulrush, Trump, Metevra, Hylas, Thorn, Cecilia, Black Diamond, Æsculapius, Little Preston, and Sir Edward. In the first spring meeting, he won the gold cup, value eighty guineas, the remainder in specie, (fourteen subscribers), beating Invalid, Gundy, and several others. First October meeting, he won the trial stakes of ten guineas each, beating Norval, Burleigh, Deceiver, Benvolio, &c.

In the Craven meeting, 1811, he beat Deceiver for one hundred guineas. In the first spring meeting, 1812, he won fifty guineas, beating Bustler and Illumination; and he beat Discount for one hundred guineas.

Cardinal York, a brown horse, foaled in 1804, got by Sir Peter Teazle, his dam Charmer, and bred by Edward Ellerker, Esq., of Hart, Hartlepool, Durham, was bought at Mr. Ellerker's sale of the stud at Doncaster, for two hundred and fifty guineas. At York spring meeting, 1807, he won the twenty guineas stakes, for three years old colts, one mile and three quarters, (ten subscribers) beating Hylas, Grey Knowsley, Whitenose, Windle, Rossington, and Sir H. T. Vane's b. f. by Phenomenon. In the York August meeting, he won a sweepstakes of thirty guineas each, twenty guineas forfeit, for three years old colts, beating Comrade, and Lord Darlington's colt, by Archduke. In the Newcastle upon Tyne meeting, 1808, he won a sweepstakes of twenty guineas each, for four years old colts, four miles, (five subscribers) beating Oran and Sylvio. He won the king's purse of one hundred guineas, four miles, beating Ranger. He also won the gold cup, value one hundred guineas, with forty guineas in specie, three years old, four miles, beating Harmless, Cramlington, Smasher, Mark Antony, and Lysander. In 1809, he won sixty-two pounds twelve shillings, four miles, beating Little Fanny and Cramlington. He also won the king's purse of one hundred guineas, beating Mowbray; the gold cup, value one hundred guineas, with forty guineas in specie, four miles, beating Julius Cæsar and Cramlington. This was a very great betting race, and the friends of Julius Cæsar lost their money to a considerable amount.

At Richmond, Cardinal York won the gold cup, value one hundred guineas, with forty guineas added, four miles, beating Mowbray, Rosette, Swiftsure, Ceres, and Lingadel. This was a very fine race, and won with great difficulty. It was the last time of his appearing in public as a racer.

X Y Z, got by Haphazard, his dam by Spaddle, was bred by Ralph Riddell, Esq., of Felton Park, Northumberland, and foaled in 1808. In 1811, X Y Z won the gold cup, value one hundred guineas, and fifty guineas in specie, at Newcastle upon Tyne, beating Engraver, Rover, and Penelope. In 1812, at the same place, he beat Merryfield for the four years' stakes, of twenty-five guineas each; he won the gold cup, value one hundred guineas, and forty guineas in specie, beating Benedict and Geranium. At Doncaster he walked over for a match of three hundred guineas, against Mr. Hipkins's Yellow Blossom. At Richmond he won the gold cup, value one hundred guineas, with thirty pounds ten shillings added, beating Phantom, Cwrw, Merryfield, Heliantha, Salamanca, and Viscount. At Durham, in 1813, he won seventy pounds, at three heats, beating Tilbury. At Newcastle upon Tyne, he won fifty pounds, beating Macaroni, Marksman, and Pigeon. The same week he won the gold cup, value one hundred guineas, and seventy guineas in specie, beating Sligo, Agnes, Sorrel, and Epicure. At Ormskirk, he won the Loyalty gold cup, value one hundred guineas, and ninety guineas in specie, beating Don Julian. At Richmond he won the cup, value one hundred guineas, and forty-three guineas added, beating Hocuspocus, Algernon, Trajan, and Rodrigo. Next day he won two heats, three miles each, (seven subscribers) a stake of ten guineas, with fifty pounds added, beating Algernon, Catherine,

and Cwrw. In 1814, X Y Z and Catton ran a dead heat, two miles and a quarter, for a stakes of twenty-five guineas each, (six subscribers); after the dead heat, the former received a compromise, and the latter walked over. He won the gold cup, value one hundred guineas, and sixty guineas in specie, beating Biddick and Sir C. Monck's bay colt. At Lamberton he walked over for the gold cup, worth one hundred guineas, four miles. At Richmond he won the gold cup, with forty-four guineas, beating Biddick, Crown-prince, Hocuspocus, and Tempest. In 1815, he broke down in running for the gold cup at Newcastle upon Tyne, against Biddick.

Catton, a bay horse, foaled in 1809, got by Golumpus, his dam Lucy Gray, by Timothy, was bred by Messrs. W. Horsley and S. King, whose property he was till 1811, having been then sold to the Earl of Scarborough. In the York August meeting, 1812, he won a sweepstakes of fifty guineas each, for three years old colts, two miles, (nine subscribers) beating Langold, Boadicea, Euryalus, Zigzag, and Don Carlos. In the York spring meeting, 1813, he ran second to Sligo, for a sweepstakes of twenty guineas each, two miles, beating Geranium, Langold, Mowbray, Otterington, and Casloff. At the same meeting he ran second to Sligo for the Constitution stakes of twenty guineas each, beating Geranium, Otterington, Fugitive, Salamanca, Mr. Gascoign's b. c. by Sancho, Duke of Leeds' b. f. by Beningbrough, and Sir M. M. Sykes's sister to Prime Minister. Next day he won seventy pounds at two trials, for all ages, three miles, beating Navigator, Manuella, and Mr. Brade's b. f. by Diamond. This was easily won.

At York August meeting, Catton won the king's purse of one hundred guineas, four miles, beating

Otterington and Knight Errant. At Doncaster he won a sweepstakes of fifty guineas each, (six subscribers) beating Algernon. Next day he won the hundred pound purse at two heats, two miles, beating Ploughboy, Mr. Garforth's g. f. by Sancho, Lord Belhaven's b. c. by Master Robert, and Diabolus. This was easily won.

In the York spring meeting, 1814, Catton ran second to Cannon-ball for the Constitution stakes of twenty guineas each for all ages one mile and a quarter, beating Mr. Vernon's b. c. by Newcastle, Catherine, and Viscount. At Newcastle he ran a dead heat with X Y Z, as before mentioned, for the Northumberland stakes of twenty-five guineas, for all ages, two miles and a quarter, (six subscribers) beating Agnes Sorrel and Lobo. After the dead heat Catton walked over. In the York August meeting, he won another of the great subscription purses of two hundred and seventy-seven pounds, ten shillings, four miles, (thirteen subscribers) beating Skip. Next day he won another of the great subscription purses of two hundred and seventy-seven pounds, ten shillings, four miles, beating Epperston and Woodman.

At Doncaster, Catton won the Fitzwilliam stakes, of ten guineas each, with twenty guineas added, (seven subscribers) beating Tramp, Cossack, Ranger, and Fairville. He also won the stakes of ten guineas, with twenty guineas added, four miles, (thirteen subscribers) beating Fugitive and Mr. T. Duncombe's b. c. by Chance. This was easily won.

At York spring meeting, 1815, Catton won the gold cup, value one hundred and fifty guineas, with thirty guineas in specie, three miles, beating Rosanne, Mr. Garforth's grey f. by Hambletonian, and Marciana. Won in a canter. Next day he won the Constitution

stakes of twenty guineas each, (fourteen subscribers) beating William and Miss Cannon (sister to Cannon-ball). At York August meeting, he won a subscription of twenty-five guineas, two miles (eleven subscribers), beating Altisidora and Viscount. He also won one of the great subscription purses of two hundred and seventy-seven pounds, ten shillings, beating Altisidora. At Doncaster he won the gold cup, value one hundred guineas and upwards, beating Everlasting, Marciani, Fulford, Legacy, and Fugleman. He also won the Doncaster stakes of thirty guineas, with twenty guineas added (thirteen subscribers), beating Altisidora.

In 1816, at York spring meeting, Catton won the gold cup, value one hundred guineas, with twenty guineas in specie, beating Fulford, King Coil, Arcot Lass, Mr. Garforth's gr. c. by Camillus, and Everlasting. At Newcastle he won the gold cup, value one hundred guineas, with thirty guineas in specie, beating Shepherd. At York August meeting, he won the subscription purse of twenty-five guineas each (eleven subscribers), beating Sir M. M. Sykes's b. f. by Carmillus, and the Duke of Leeds' b. c. by Orville. He also walked over for one of the great subscription purses of two hundred and seventy-seven pounds, ten shillings, four miles; and won the Doncaster stakes of ten guineas each, with twenty guineas added (thirteen subscribers,) beating Dinmont. He started only once after, and was beat by Rasping.

Partisan, a bay horse, foaled in 1811, won a great deal of money. Whalebone, foaled in 1807, won several stakes, and was sold at Mr. Ladbroke's sale in 1814, for five hundred and ten guineas. Biddick (already mentioned) obtained some prizes, and was purchased by Colonel Whaley, having been bred by Mr.

W. Edwards. Blucher, a bay horse, foaled in 1811, was remarkable for his achievements; also Whisker, foaled in 1812, *cum multis aliis*.

One of the most fortunate and remarkable horses ever upon the turf was Doctor Syntax, the property of the late Ralph Riddell, Esq., of Felton, in the county of Northumberland, but bred by Mr. Knapton, of Yorkshire. The Doctor was got by Paynator, dam by Beningborough, and grandam by Carbuncle. He has won no less than twenty cups, besides large sums in cash.

The following is a statement of the number of winners and the prizes won by the stock of many of the present fashionable blood-horses:—

By Waxy (son of Pot-80's), aged 30, 167 winners, won £64,454, 15*s*., and nine cups.

Sorceror (son of Trumpator), aged 24, 162 winners, won £74,769, 14*s*. 10*d*., and five cups.

Haphazard (son of Sir Peter Teazle), aged 23, 56 winners, won £15,964, 14*s*., and fifteen cups.

Popinjay (son of Buzzard), aged 23, 20 winners, won £9,163, 11*s*.

Walton (son of Sir Peter Teazle), aged 21, 91 winners, won £45,526, 16*s*., and thirteen cups.

Orville (son of Beningborough), aged 21, 109 winners, won £40,773, 14*s*., and fourteen cups.

Selim (son of Buzzard), aged 18, 83 winners, won £28,606, 7*s*. 6*d*., and three cups.

Grosvenor (son of Trumpator), aged 18, 13 winners, won £7,956, 15*s*., and three cups.

Hedley (son of Gohanna), aged 17, 16 winners, won 3,941, 2*s*. 6*d*., and two cups.

A singular instance of the courage of a race-horse occurred during the race for the members' plate, at Salisbury, August 17, 1814. Mr. Radcliffe's Spe-

culator, shortly after starting, broke down; notwithstanding which, although he had nearly two miles to run, and gave the filly Amanda forty pounds, after a severe struggle he ran a dead heat with her.

In December, 1815, Lord Carmarthen, son of the Duke of Leeds, whilst hunting with his father's hounds in the neighbourhood of Hornby Castle, Yorkshire, leaped a brook which was bank full; and on being measured the next day from hind-foot to fore-foot, it was twenty-six feet nine inches. His grace, though known to be a superior horseman, did not venture over it; neither did the huntsman nor whipper-in, nor indeed any other person in the field. Lord Carmarthen was on Philippic, an excellent hunter, which, when two years old, was one of the most speedy horses of his age.

'About twenty-five years ago,' says Mr. Lawrence, 'an Irish horse, for a wager, leaped over the wall of Hyde-park, close to the gates of Hyde-park Corner. The height of the wall on the side on which he rose was six feet, and on the other side eight. The horse was about fifteen hands high, without anything remarkable in his general appearance. He was led up to the wall till within the distance of half a dozen yards, when he was turned loose. In going over it, however, he knocked off a brick with his hind-leg; and a dispute arising from that circumstance, he was brought round again to the same place, when he cleared it in the most perfect manner at the second time of trial.

'This leap, considering the great height of it, and its taking place over such a hard and unyielding substance as a brick wall, appears almost incredible; but the author can vouch for its being a fact, from having been an eye-witness on the occasion.'

OF THE VARIED FORM OF THE HORSE, ACCORDING TO THE SEVERAL USES TO WHICH HE IS APPLIED.

"It is evident," says Mr. Blaine, in his valuable work, *Veterinary Outlines*, "that, according to the several purposes to which we apply the horse, so great variations in his bulk and proportions are necessary. The fleetest racer that ever scoured the plain would cut a sorry figure in a London coal-waggon; and the most splendid among the stallions of Barclay's brewing establishment would be ill-fitted for a breathing over the courses of Newmarket or Doncaster. Let us figure to ourselves four Shetlanders in a Portsmouth drag, or Lord Sefton's buggy-horse in a garden chair or pony-chaise, and we shall be at once convinced that, had not climate operated in producing different races of horses, and with very different proportions, the industry of man would still have enlisted the agencies of domestication to bend his frame, as well as those of horned cattle and of the dog, to his purpose.

"The form of the *racer* at once points him out as an animal intended for great velocity of motion. His aboriginal outline, as derived from the east, betrayed a similar intention; and as his uses have been principally confined to a display of these powers of locomotion, so it has been the endeavour of the breeders of this variety, by the arts of domestication, to mould his form, and fashion his organs, to a capability for velocity even greater than that intended by nature; which is evident by the circumstance, that none of the eastern horses can now compete with our race-horse. But to effect this in any great degree, some of those qualities which in most of the other uses to which the horse is put are

absolutely requisite, must, of necessity, be sacrificed; for nature, to keep up a true balance between her creatures, never gives to any individual the united advantages of all. In the race-horse, the sacrifices at the shrine of velocity are safety and ease, as regards progression, and strength as regards the bearing of burdens or the drawing of loads. In many other of the uses of the horse we require that his extremities shall command a principal share of attention, by their own height, and by the elevation of the withers and crest they accompany. In the racer, on the contrary, as in other quadrupeds remarked for speed, we are more attentive to the hinder extremities; convinced, as we are by analogy and experience, that they must be long, to maintain a preponderating influence over the whole remaining portions of the machine, which they are the principal agents in displacing and propelling forward. In the racer, we do not endeavour to produce any other than a circular form of carcass, for none is so good for all horses; but we do endeavour to lessen its diameter generally. By every means in our power we therefore draw up the belly, as it is called, that we may not only lighten the animal thereby, but also that we may obtain more room for the operation of the true thigh of the horse, which would be otherwise obstructed by the pressure of heavy viscera on a full belly. But in the degree that we take liberties with the belly towards the loins by *drawing it up*, we must enlarge the capacity of the trunk forwards. We therefore not only prefer a deep chest, but one also of large diameter. 'The capacity of the chest depends on its form more than on the extent of its circumference; for where the girth in equal in two animals, one may have much larger lungs than the other. A deep chest, therefore, is not capacious, un-

less it is proportionably broad. The external indications of the size of the lungs are the form and size of the chest, the form of which should approach to the figure of a cone, having its apex situated between the shoulders, and its base towards the loins.'—*Cline on the Form of Animals.*

" Such a form of chest is essential to the racer, and was found in his primogenitors. Its advantages are, first, that it receives the volume of digestive organs somewhat displaced by the powerful action of the abdominal muscles in training. Lodged here, the digestive functions can be carried on to the proper nourishment of the animal. Secondly, by this form the lungs, which are of the first importance to the racer, can expand to meet his exigencies. ' It is on their size and soundness thet the strength and health of an animal principally depends. The power of converting food into nourishment is in proportion to their size. An animal with large lungs is capable of converting a given quantity of food into more nourishment than one with smaller ones.'—*Ib.*

" We must not, however, hold the operation of the fore extremities too cheaply ; nor be inattentive to the necessity of perfection in their form. The principal weight of the machine is borne by them ; they sustain the head, neck, and trunk ; and they not only stand as opponents to the inordinate power of the hinder extremities, but they also take a portion, though a limited one, of the progressive movements ; for they draw the hinder extremities forwards at the moment when these latter have expended their force, by flexion and extension, and thus place them in a situation for new action. If it is not of consequence to the racer that the general fore-hand be equally high with the hinder parts, it is however so, that the shoulder be deep and

oblique; and such form of it usually, but not always, accompanies a deep and capacious chest. The arms, under the above views, should be powerfully formed throughout; and it is particularly necessary to their freedom of action in the gsllop, that they stand well out, and perpendicularly, as a columnar support. As a summary; the racer should exhibit the greatest possible quantity of bone, muscle, and sinew, condensed into the smallest possible bulk throughout the whole machine. The body also should be sufficiently long to allow of free flexion of the hinder extremities: it is an axiom with the best judges of the racer, that 'there must be leugth somewhere;' but the *where* has occasioned some discrepancy of opinion, which arises from not uniting analogy with mechanical principles. It is argued by some, that long legs can propel a short body forward, and which is partially true; but our most perfect model of speed is the greyhound; and a very short bodied greyhound is seldom seen, and still less seldom is such a one seen to run well. It is evident that the hinder extremities cannot be carried beyond the extent of the angles allowed by the direction of the bones: if carried further, they would endanger the safety of the articulation, or an injurious pressure on the carcass they propelled. A short body, therefore, is injurious to speed, both by mechanically preventing the full extent of the action of the hinder extremities, and also by losing as much at each stroke of the gallop as is the difference between its length and that of one differently formed; which, if it were only one inch, yet, when multiplied by a number of strokes over the Beacon course, would amount to an important distance in a closely contested race.

"Both length and breadth in the hinder quarters have been already proved to be essential to the weli-

formed racer. It is hardly necessary to add, that the thighs must be muscular in the extreme, the hock broad, and, like the knee, it should be placed low down in the limb: the hinder pasterns, like those before, should be long and oblique, but with strength sufficient to combat the strain on them.

The *hunter* of the present day is totally a different animal to what he was fifty years ago. To follow hounds of every kind, as they are now bred, the hunter should be but one, or at the most two, removes from a full-bred horse: some now in use are altogether full-bred. Consequently the selection of a hunter, under the present system, combines the qualities of speed met with in the racer, with as much additional bone, muscle, and extended form altogether, as will enable him to carry more weight, and support it during a long course of fatigue and privation. Therefore with the following form, the more of those qualities that usually accompany what is called full-blood, the better: the breed yielding the speed and determination, and the form providing for the application of these qualities to the purposes of the rider.

To the *hunter* it is essential that he be elevated in his fore-hand, and possess a sufficient length of neck to enable him, in his long-continued gallops, to bring the whole of the air-passages, from the nostril to the chest, into a straight line nearly, which will greatly assist him in long and severe bursts. It is essential also to good wind, as pointed out in the form of the racer, that his chest be deep and more circular than narrow; and equally so, that he may have digestive capacity without clumsiness. His arms must be muscular, and his flexor tendons should stand out from his knee, and proceed wide and flat down the whole of his canon: and as in the hunter, flexibility must, in some degree,

give way to strength, his pasterns should be less long and oblique than those of the race-horse. The body of the hunter may, with propriety, be shorter than in the racer: a short cylinder can sustain more than a long one; and there is much difference in weight between the jockey of eight or nine stone, and the sportsman of twelve or fourteen; as well as between the race of a few minutes and the burst of an hour. The lengthened stride of the race-horse, allowed by a long body and contracted belly, would exhaust the hunter, and would sink him injuriously in deep soils. A shorter and quicker gallop, the consequence of a shorter body, tends likewise, on most occasions, to husband his resources. Moderate length of body only is also favourable in ascending ground; and it is equally so in easing the concussion of descending the same, by shortening the stroke. The hinder extremities, in the hunter, should present all the principles of speed of the race-horse, with as much additional bulk of muscle, and compactness of joint, as are consistent with the probable velocity required, and the weight he is to carry; for if it is essential that the racer should be powerfully formed behind, to propel him forward in the gallop, so it is equally necessary that the hunter should be well formed in his loins, and well *let down* in his thighs, that he may have not only speed in his gallop, but that he may have strength to cover his leaps, particularly when they are extensive and numerous. As regards the feet in the hunter, they had better be too strong than too weak: a thin, weak, and shelly crust, is a very bad property here, for a sudden misplacing of such a foot, on an uneven surface, will often bring him down as though he was shot.

The *hackney*, more than any other variety of horse, adds to our health and comfort; we ride him for

amusement, and he transports us long distances on our personal avocations. On some only of these occasions speed is desirable; but on all *safety* is indispensable; and next to that, is the ease with which his motions are performed. These requisites remove the hackney still further than the hunter from that form which best suits the purposes of the racer. In the hackney, therefore, we scrutinize his fore quarters with the same attention that we pay to the hinder parts of the racer; for, as to the purposes of the latter, the fore parts are subordinate to the hinder, so in the hackney, speed being infinitely less important than either ease or safety, and particularly the latter, it is essential that his fore parts be so formed as to ensure these properties. And here it may not be irrelevant to inquire, on what does the safety of action mainly depend? Is it on any particular care of the animal himself in his progression? or does it necessarily arise out of certain peculiarities in his formation, dependent on such an elevation of his feet as will ensure his not stumbling by any erroneous placing of them? The close observer, I think, will answer, that both are concerned: many horses go safely, and yet by no means elevate their legs high; but such are attentive to their steps; and when they see stones or other risings in their path, carefully avoid them. In my early practice I was called on to examine a horse intended for the French court, at the stables of that veteran dealer Choppin. I objected to the horse that he went *close to the ground*, which even his owner could not deny: but he still argued, that, although he did appear to go near the ground, yet that he was particularly safe in all his paces; and, as a lure to the purchase, would have offered a bet, that on the roughest ground he would not make one trip. As the animal in all other

respects was desirable, ground purposely stony in the extreme was chosen, over which he was tried; and it was singular to remark, that in every pace he accommodated the elevation of his feet exactly to the elevations of surface they were to pass over; but it was with a kind of frightful nicety to the observer. On the same ground, many high actioned horses, from inattention to the matters on it, might have tripped by meeting any unusual rising; or, by placing one of the feet on a rolling stone, might have fallen altogether. But it is not hence meant to argue, that the most careful hackney which does not naturally elevate his feet is a desirable one. Horses, it is true, are in a great degree crepuscular, and see in a very moderate light. But would such a horse be safe to ride at a brisk trot along an uneven road in a dark night? Or even in a long day, might not fatigue bring his feet down without his usual caution?

The *fore-hand* of the *hackney*, therefore, should be elevated, and his shoulder by all means must be oblique, so that he may not only lift up his feet, but also ride *lightly in hand*, as it is termed by horsemen. To which latter valuable quality it is also essential that he have a neck of just proportions, and that his head be particularly well placed on it, so as to afford him room for flexing himself to the action of the bridle, which, in the hands of a good rider, will sometimes constrain him to throw himself on his haunches, and at others to carry himself forward for more speedy progression. The remainder of the fore limbs ought to present a perfectly vertical line to the pastern, which should have such length and obliquity, and such only, as shall bring the toe directly under the point of the shoulder. The body should be circular, neither long nor very short; his saddle-placing good, his flank on a plane

nearly with the rest of his carcass, his loins wide, and his croup gently curved only, to allow of a graceful setting on of the tail. For this variety of horse, a good foot ought never to be dispensed with. Height is not so essential in the hackney as in the hunter; it need never to exceed fifteen hands two inches; in most cases it may, with more propriety, range between fourteen hands three inches, and fifteen hands one inch. Altogether, his frame should be compact, without being in the least clumsy; and with this form, the more *breeding* he shews, short of full blood, the better.

Coach-horses should be nothing more than very large hackneys; and whoever is at the pains to consider the matter attentively will agree with me, although it is not usual to regard the matter exactly as I have stated it. Horses for two-wheeled carriages should be the same, but something smaller. The former are perfect between fifteen hands three inches and sixteen hands one inch; the latter between fifteen hands one inch and fifteen hands two inches. No horse is so adapted for quick draught as a powerful hackney: why, otherwise, do we take such pains to lunge and rein up our carriage horses, but to lighten them before? When we again go back to old times, and read advertisements holding out safe and *expeditious* travelling from London to York in *six* days, then we may safely resume the old Flanders breed.

The *heavy draught-horse*, usually called the *cart-horse*, has likewise submitted to improvement, many being now purposely bred with lighter and higher forehands; by which their motions are much accelerated, to the advantage of the transit of light loads, as in fly-wagons, and on railroads, and likewise to some agricultural purposes. The horse called the Suffolk punch, by this alteration, is enabled to plough one-sixth more

than formerly. But where the weight and resistance to be overcome are great, weight and bulk in the animal used on the occasion are required; and here a heavy fore-hand, and one not too elevated, is favourable to the exertion used. In cases where draught-horses are employed in the transporting of heavy loads without loss of time, as in coal-wagons, brewers' drays, &c. &c., then height is very properly combined with great substance; and the horses seen thus employed, particularly in our coal-wagons, in the streets of London, are splendid specimens of bulk and power. The traveller through Normandy must have remarked them there also equally fine. The general form of the *cart-horse* should, therefore, present (but in different proportions, according to his uses) size and weight, with every mark of power: his limbs should be rather short than long; his joints large and firm; and the whole should evidently be operated on by powerful masses of bone, flesh, or muscular fibre: the simple fat of some of our draught-horses adds little to their weight, and nothing to their strength; but the food which produces it robs the poor of many a meal."

APPENDIX.

AN ABSTRACT OF THE GAME LAWS.

THE word Game, includes *Hares, Pheasants, Partridges, Grouse, Heath and Moor Game, Black Game, and Bustards.*

For killing or taking any game, or using any dog, gun, net, or other engine; for killing or taking any game on a Sunday, or Christmas-day; or killing or taking any partridge between the first of February and the first of September in any year; or any pheasant between the first of February and the first of October; or any black game between the tenth of December in any year, and the twentieth of August in the succeeding year; or in the county of Somerset or Devon; or in the New Forest in Southampton, between the teuth of December and the first of September; or anv grouse between the tenth of December, and the twelfth of August; or any bustard between the first of March and the first of September; on conviction before two justices of the peace, a penalty for the first offence, not exceeding £5, and for the last, for every head of game, not exceeding £1 with costs; and for putting poison

on any ground, open or enclosed, where game usually resort, a penalty not exceeding £10.

If any person licensed to deal in game by this act, shall buy or sell, or knowingly have in his house, &c. any game after ten days from the respective days on which it shall become unlawful to kill or take such game; or, if any person, not being licensed to deal, shall buy or sell any game after ten days from the time aforesaid, or shall knowingly have in his house, &c., any game (except game kept in a mew or breeding place,) after forty days from the time aforesaid, he shall, on conviction before two justices, forfeit for every head of game so bought or sold, or found in his house, &c., not exceeding £1.

Not to affect existing laws respecting game certificates. Dispenses with *qualifications*, and allows every certificated person to kill game, subject to proceedings for trespass.

The lessor or landlord may enter upon land occupied under any lease or agreement made prior to the act, or authorize any other certificated person to enter upon such land to kill or take game thereon; and no such occupier, as aforesaid, may kill or take the game on such land, except when such right has been expressly granted by such lessor or agreement, or a fine shall have been taken, or such lease or agreement shall have been made for a term exceeding twenty-one years.

This act does not affect any existing or future agreements respecting game, or any rights of manor, forest, chase, or warren, nor any of his majesty's forest rights, &c.

Not to extend the rights of any cattle-gate, or rights of common; but the lord of the manor is to have the game of the wastes.

The landlord, having the game, may authorize any certificated persons to kill it; where the landlord, &c. has a right to the game in exclusion of the occupier, the occupier shall be liable to a penalty not exceeding £2., and for every head of game, not exceeding £1. for killing it, or permitting others to kill it.

Lords of manors may appoint gamekeepers, and may authorize them to seize for the use of such lords, all such dogs, nets, or other engines, for the killing or taking game as shall be used within the limits of the said manors by any uncertificated; and such lords may depute any person whatever, whether acting as a gamekeeper to, or retained as the male servant of any person, to be a gamekeeper for such manors, or for such divisions of such manors, as such lords shall think fit, and may authorize such person, as gamekeeper, to kill game for his own use, or for the use of any other person specified in such deputation, and may give all the powers of gamekeeper; and no person so appointed, and not killing any game for the use of such lords, shall be deemed to be the gamekeeper or male servant of such lords.

Every person entitled to kill game upon any lands in Wales of the clear annual value of £500. whereof he shall be seized in fee, or, as of freehold, or to which he shall otherwise be beneficially entitled in his own right, not within the bounds of any manor, or being within the same enfranchised or alienated therefrom, may appoint gamekeepers.

All appointments of gamekeepers to be registered with the clerk of the peace.

Certificated persons may sell game to licensed dealers; but no certificate with a less duty than £3. 15*s.* 6*d.* shall authorize gamekeepers to sell, except with the authority of their masters.

Justices to hold a special session yearly for granting licenses to any person being a householder, or a keeper of a shop or stall, and not being an innkeeper or victualler, or licensed to sell beer by retail, nor being the owner, or guard, or driver, of any mail-coach, or other vehicle employed in the conveyance of the mails of letters, or of any stage-coach, stage-wagon, van, or other public conveyance, nor being a carrier or higgler, nor being in the employment of any of the above-mentioned persons, a license to buy game at any place from any person who may lawfully sell game by virtue of this act, and also to sell the same at one house, shop, or stall, only kept by him; provided that every person while so licensed to deal in game, shall affix to some part of the outside of the front of his house, &c. a board with his christian and surname, in legible characters, with the words *licensed to deal in game*, and every such license granted in the present year shall continue in force until the 15th of July, 1832, and in any succeeding year for one year.

Persons licensed to deal in game, must take out a certificate, with a duty of £2. (which shall be in force for the same period as the license), under a penalty of £20.

Collectors to make out a list of persons licensed to deal in game, and shall at all reasonable hours produce such list to any person, on making a verbal application for inspection, for one shilling.

Only one license for partners.

On commission of any offence against the act, license to be void.

Penalty for killing game without a certificate, not exceeding £5., but to be cumulative.

Penalty for destroying or taking the eggs of the grouse, swan, wild duck, teal, or widgeon, for every egg, five shillings.

Penalty for selling game without a license, and on certificated persons selling to unlicensed persons, for every head of game, not exceeding £2.

Penalty on unlicensed persons buying game, except from licensed dealers, for every head of game, not exceeding £5.

Penalty on licensed dealers, buying game from uncertificated or unlicensed persons, not exceeding £10.

Buying and selling game by any person employed on behalf of any licensed dealer, and acting in his usual course of business upon the premises, shall be deemed to be lawful, and any licensed dealer may sell any game which shall have been sent to him to be sold on account of any other licensed dealer.

If any person shall trespass in the day-time upon any land in search of game or woodcocks, snipes, quails, landrails, or conies, he shall, on conviction before a justice, forfeit not exceeding £2.; and if any persons, to the number of five or more together, shall commit any trespass, by entering in the day-time upon any land in search of game, &c., each shall forfeit not exceeding £5.; and in defence any matter may be proved which would have been a defence to an action at law at such trespass, and where the occupier of the land, not being entitled to the game, allows any person to kill it, the party entitled to the game may enforce the penalty.

Trespassers in search of game, &c., may be required by the party entitled to the game, or by any gamekeeper or servant, or any person authorized to tell their names and abodes; and, in case of refusal, or giving illusory description, or of continuing, or returning on the land, may be apprehended by the party aforesaid, or any person acting in his aid, and conveyed before a justice; penalty not exceeding £5.

Penalty on five or more persons found armed, using violence, &c., to prevent being required to leave the land, not exceeding £5.

Penalty for trespass in day-time, *i. e.* between sun-rise and sun-set, in her majesty's forest, not exceeding £5.

The provisions as to trespassers not to apply to persons hunting, having right of free-chase; nor lords of manors and their gamekeepers.

When any person shall be found either by day or by night upon any land in search of game, and shall have in his possession any game appearing to be recently killed, any person having the right of killing game upon such land, or any gamekeeper, or servant, or any person acting in aid of him, may demand of the person so found such game in his possession; and in case such person shall not immediately deliver up such game, may seize and take the same from him, for the use of the person entitled to the game upon such land.

Penalties for offences against this act, to be given to the parish to be applied to the county rate.

Time for payment of penalties and of imprisonment for non-payment in the discretion of the justices; two months only under the sum of £5.; three months only for above £5.

If any person summoned by a justice, shall neglect to appear at the time and place appointed, and no reasonable cause for his absence shall be proved, or on appearing shall refuse to be examined on oath, touching any offence by the justices, he shall forfeit not exceeding £5.

Prosecution for offences to commence within three calendar months, and the parties charged or summoned, not appearing, or likely to abscond, justice

may issue a warrant for the apprehending the party before him.

Prosecutor not required to prove a negative, but the party seeking to avail himself of any certificate, license, consent, or authority, shall be bound to prove the same.

Any person aggrieved may appeal to the quarter sessions of the peace to be holden not less than twelve days after the conviction, for the county, riding, division, liberty, franchise, city, or town, wherein the cause of complaint shall have arisen, but a notice in writing of the cause of such appeal, within three days after such conviction, and seven clear days, at the least, before such sessions is to be given, and the party either to remain in custody until the sessions, or within such three days enter into a recognizance with a sufficient surety, before a justice, to appear at the said sessions, and to try such appeal, and to abide the judgment of the court, and to pay costs; and after such notice and recognizance, the justice shall liberate such person, if in custody; and the sessions shall determine the appeal, and make such return therein as to them shall seem meet, and order the defendant to be dealt with according to the conviction, and to pay costs; and if necessary issue process for enforcing such judgment.

This act not to preclude actions for trespass, but no double proceedings for the same trespass can be had.

Actions and prosecutions for any thing done in pursuance of this act shall be commenced within six calendar months, and notice in writing of the cause of such action shall be given to the defendant one calendar month at least before the action, and no plaintiff shall recover if tender of sufficient amends be

made, or if a sufficient sum of money be paid into court by the defendant.

This act not to extend to Scotland or Ireland.

Certificate.

By the act of 25 George III. c. 20, every person (except the royal family) in Great Britain, who shall use any dog, gun, net, or other engine for the taking or destroying of game (not being a gamekeeper), shall annually procure a certificate from the clerk of the county, charged with a stamp duty of two guineas. This stamp-duty was afterwards raised to three guineas; and, in the 48 George III. c. 55, the statute underwent a sort of revision; and the sportsman is now to apply to the collector of the taxes, who will receive the money for the certificate (which is three guineas and a half,) and give a receipt for the same, for which receipt he is legally authorized to demand one shilling. The receipt thus obtained is to be delivered to the clerk of the commissioners acting for the district, who will, in return, give the requisite certificate, without any additional expense. A gamekeeper's certificate must be obtained in the same way, the expense of which is twenty-five shillings, if he be an assessed servant; and, if not an assessed servant, three guineas and a half.

The act of 48 George III. also added several birds (namely, the woodcock, snipe, and land-rail) to the list of game, as well as the rabbit; with, however, the following exceptions:—the taking of woodcocks or snipes in nets or springes, and the taking or destroying rabbits in warrens, or any inclosed ground; or by any person in land which he occupies.

It should be observed, that merely the certificate will not enable a person to kill game: he must also possess the qualifications by property which we have already mentioned and explained. If a qualified person sport *wit'out* a certificate, he is liable to a penalty of twenty pounds; if a non-qualified person kill or hunt for game *with* a certificate, he still subjects himself to a penalty of five pounds.

The commissioners for the affairs of taxes must annually insert, in one or more of the newspapers in the county, the names and residences of the persons who have procured certificates.

Trespass.

This term applies either to qualified or non-qualified persons; and means literally the entry of one man upon the grounds of another, without the occupier's permission, and doing some damage, however trifling, to his real property, for which an action may be brought, and satisfaction obtained according to the extent of the mischief, or the malicious intention of the trespasser. Nevertheless, in order to prevent, as much as possible, vexatious litigation, it is enacted, by 43 Elizabeth and 22 and 23 Charles II, that where less damages than forty shillings are given by the jury, the plaintiff shall be allowed no more costs than damages; unless (see 8 and 9 William and Mary, c. 11) it shall appear that the trespass was *wilful* and *malicious*, in which case the plaintiff shall recover full costs of suit.

A man becomes a *wilful* and *malicious* trespasser, in the legal sense of the term, if he enter again upon the land or manor from which he has been desired,

either verbally or by a written notice, to abstain. The occupier of land can, on such land, demand the address of a sportsman, or the sight of his certificate, a refusal of which subjects the party to a penalty of twenty pounds. This demand may also be made by any assessor or collector of taxes the parish, commissioner, surveyor, inspector, gamekeeper of the manor, or the landlord or lessee of the land upon which the sportsman is found.

A verbal notice from the occupier or landlord is sufficient; and, indeed, the *occupier* of land has a legal right to order the lord of the manor, or even his own landlord, to abstain from sporting on the ground he occupies, unless he has secured this privilege by a clause in the lease, which sporting landlords generally take care to have inserted.

From either keeper, or a lord of a manor, a verbal notice is not sufficient; as keepers generally carry printed notices, which ought to be drawn up in the following manner:

'March 13, 1844.

'To Mr. ———

'I hereby give you notice, that if you hunt, set, net, hawk, fish, or fowl, or use any other method, to destroy the game upon any of my lands, manors, or royalties, within ————, I shall deem you a wilful trespasser, and proceed against you as the law directs.

'————.'

'To Mr. ———.'

This notice must be signed by every tenant or occupier of land throughout the manor:—if any tenant refuse his signature, the notice will not extend to the land of which he is in possession; but the

mandate of the lord is generally availing (if the lease provide no remedy). As the lord is seldom owner of the whole fee-simple of the manor, it frequently happens, that occupiers of land independent of him will have nothing to do with his notices, and from such land he cannot debar the sportsman, if the occupier have no objection to his sporting on it.

N. B. A trespass is deemed *wilful* (though no damage may have been done) where the sportsman come upon ground from which he has been legally noticed to abstain.

A notice remains in force for the life of the individual to whom it is given; with this exception, however, that if the manor change its lord, a second notice from the new lord will be necessary; or, if any of the land change its occupier, a new notice by the new occupier must be given.

A FREE WARREN.

Is a franchise granted by the king for the custody of beasts and fowls of warren, namely, hares, rabbits, partridges, and pheasants; but this franchise is now little known, the name being retained principally in ground set apart for breeding rabbits. 2 *Black. Com.*

SEASONS FOR HUNTING OR DESTROYING GAME.

The season for shooting grouse (called red game) commences on the 12th of August, and concludes on the 10th of December. Heath-fowl (black game) begins on the 20th of August, and ends on the 10th of December. The pheasant season begins the 1st of

October, and concludes with the 1st of February. The partridge season commences on the 1st of September, and ends the 1st of February. Bustard shooting commences the 1st of September, and concludes the 1st of March. The mere possession of any of these birds at any other period of the year (except such as may be kept tame) subjects the party (1 & 2 Will. IV), on conviction before two justices, to a penalty of not more than twenty shillings for every head of game so killed or taken, as the said justices shall think fit, together with the costs of the conviction.

In new forests, the season for heath-fowl does not commence till the 1st of September.

Upon grouse-mountains, or wastes, the occupier is forbidden to burn heath, furze, &c. between the 2d of February and the 24th of June, upon pain of being committed to the house of correction, there to be whipped and kept to hard labour for a period not exceeding one month, nor less than ten days.

The taking of wild ducks, teal, widgeons, &c. between the 1st of June and the 1st of October, renders the party liable to a penalty of five shillings (9 Anne, 25, and 10 Geo. II. c. 32).

The season for hare hunting is from Michaelmas till Candlemas; but there does not appear to be any penalty attached to the infraction of this law.

For tracing hares in the snow a penalty of twenty shillings is inflicted (1 Jac. I. c. 27), and the taking them in snares or gins is punished in the same manner. The 22d and 23d Car. II. inflicts a penaly of ten shillings for this offence. These acts, however, are not resorted to; for the true sportsman will never be guilty of such offences, and the poacher is more effectually punished by the fine attached to his want of certificate, &c.

For woodcocks or snipes there is no specified time.

To hunt or destroy game on a Sunday or on Christmas day, or in the night (which shall be deemed to commence the first hour after sunset, and conclude at the beginning of the last hour before sunrise), renders the party liable to a penalty of not more than five pounds, with costs, on conviction before two justices (1st and 2nd Will. IV).

By 1st and 2d William IV., the penalty on persons trespassing in the day-time upon lands in search of game, is forty shillings and costs; and, if five or more persons together trespass in the day-time upon any land in pursuit of game, woodcocks, snipes, quails, landrail, or coneys, *each* of such persons shall forfeit any sum not exceeding five pounds, as one justice may think fit, with the costs of the conviction. And where the occupier of the land, not being entitled to the game, allows any person to kill it, the party entitled to the game may enforce the penalty. Such trespassers may be required to quit the land, and to tell their names and abodes; and, in case of refusal, may be arrested, the penalty not exceeding five pounds: but parties so arrested must be discharged unless brought before a justice within twelve hours

By the same act, where five or more persons are found on any land, or in any of his majesty's forests, &c. in the day-time, in search of game, &c. being armed with a gun, and by violence, intimidation, or menace, prevent, or endeavour to prevent any person from approaching them to require them to quit the land, or tell their names and abode respectively, such persons shall forfeit any sum not exceeding five pounds each, which two justices may think fit, with the costs of the conviction, in addi-

tion to, and independent of any other penalty to which they may be liable under this act.

The penalty for trespass in the day-time in his majesty's forests, &c. is forty shillings and costs ; and day-time shall be deemed to commence at the beginning of the last hour before sun-rise, and to conclude at the first hour after sunset, for the purposes of this act.

Persons not having a right or permission to kill game, who shall wilfully take out or destroy in the nest, the eggs of any bird of game, swan, wild duck, teal, or widgeon, or knowingly have in their possession or control any such eggs so taken, shall, on conviction before two justices, pay for every such egg any sum of money not exceeding five shillings, with costs (1st and 2d Will. IV. c. 32).

OF TRAFFICING IN GAME.

The act 1st and 2d Will. IV. repeals all former acts which prohibit the sale of game, and enacts that in every month of July, the justices of every county, &c. shall hold a special session, or seven days' notice, for the purpose of granting licenses to deal in game ; and the majority assembled at such sessions, not being less than two, are authorized to grant, if they think fit, to any householder, or keeper, of a shop or stall within such district, &c. and *not* being an innkeeper, or licensed to sell beer by retail, or owner, guard, or driver of any coach, stage-wagon, &c., not being a carrier or higgler, nor being in the employment of any such persons, a license, empowering the person to whom it is granted to buy game from any person lawfully authorized to sell it, and to sell the same at one

place only, kept by the person so licensed; provided that such person keep on the outside of the front of his house, &c. in legible characters, his christian and surname, with the words, "*licensed to deal in game;*" such license to continue in force one year after the granting thereof. Persons licensed to deal in game must take out a certificate, with a duty of two pounds.

The collectors are to make out a list of persons licensed to deal in game: one license is sufficient where they are partners in any firm; and licences become void, in case of any conviction.

The penalty for selling game without a license, and on certificated persons selling to unlicensed dealers, is forty shillings and costs.

Innkeepers may, without any license to deal in game, sell game for consumption in their own houses, such game having been procured from some licensed person, and not otherwise.

The possession of game is illegal in dealers in ten days, and in other persons in forty days, after the expiration of the season.

PARTICULAR LAWS TO PREVENT THE IMPROPER DESTRUCTION OF HARES.

The act of 14th and 15th Henry VIII. c. 10, inflicts a penalty of six shillings and eightpence for tracing and killing a hare in the snow. By the 1st of James I. c. 27, three months' imprisonment is inflicted on the offender for either tracing or *coursing* a hare in the snow; unless the offending party pay to the churchwardens, for the use of the poor, twenty shillings for every hare, or within one month after commitment becomes bound with two sureties, in twenty pounds

each, not to offend again in like manner. Two witnesses are necessary in this case, as also two justices of the peace.

The same penalty (by the same act) is also inflicted for taking hares with hare-pipes, snares, or any other engines; and, to convict, two witnesses and two justices are necessary, as in the preceding case.

By the 22d and 23d of Charles II. c. 25, if any person be found using or setting any snare, or other engine, for the purpose of taking hares, he shall make the injured party such recompense as the justice of the peace shall appoint, and pay down immediately for the use of the poor, a sum not exceeding ten shillings; or be committed to the house of correction for a time not exceeding one month. In this case, the oath of one witness, before one justice, is sufficient; but it must take place within a month after the offence is committed.

Rabbits and Pigeons.

By 3d James I. no person has a right to hunt or kill coneys, unless possessed of hereditaments of the yearly value of forty pounds, or be worth in goods two hundred pounds, or have an inclosed rabbit-ground of the value of forty shillings a year. An infringement of this law subjects the offender to have his dogs or engines seized by *any* person having hereditaments in fee, in tail, or for life, of the annual value of one hundred pounds in his own right, or that of his wife; who is entitled to keep them for his own use.

By 22d and 23d Charles II. c. 25, it is enacted, that if any person shall, at any time, enter any ground lawfully used for breeding or keeping rabbits (whether

inclosed or not), and chase or kill any of these animals, against the will of the owner, not having lawful title so to do, shall upon conviction by one witness, or his own confession, before a justice of the peace, forfeit to the injured party treble damages and costs, be imprisoned for three months, and find security for future good behaviour: but the prosecution must be commenced before the expiration of one month after the offence has been committed.

By the same statute it is also enacted, that no person shall kill or take in the *night* any rabbits upon the *borders* of warrens or other grounds lawfully used for keeping coneys, except the owner or lawful possessor of the ground upon which such rabbits may be found, or a person employed by such owner or possessor. Any offence subjects the party to make such satisfaction as the justice shall think proper, and to forfeit, for the use of the poor, a sum not exceeding ten shillings, or be committed to the house of correction for a term not exceeding one month. This penalty too is inflicted, by the same act, upon any person found setting or using any snares or other engines for the taking or destroying of coneys.

By 9th Geo. I. c. 22, (called the Black Act) any person entering, *armed and disguised*, any grounds where rabbits are lawfully kept, and robbing the same; or who shall, though *not armed and disguised*, rescue any person in custody for such an offence, or procure any person to join him in such an act, such person shall be deemed guilty of felony without benefit of clergy.

The act of 5th Geo. III. c. 14, makes it transportation for seven years, or such lesser punishment by whipping, imprisonment, or fine, as the court shall think fit, for any person to enter any rabbit-ground

in the night time, and there take or kill any coney against the will of the owner, or aid and assist therein.

If rabbits, however, come upon a person's ground, and damage his herbage or corn, it is lawful for him to kill them.

Any person who shall shoot, or destroy in any manner, any pigeon, shall, on conviction before two justices, on the oath of two witnesses, or on his own confession, pay, for the use of the poor, twenty shillings for every pigeon; or be committed to gaol for three months, and within one month after commitment find sureties not to offend again.

However, by 2 Geo. II. c. 29, one witness and one justice are sufficient; and the offender is to forfeit twenty shillings to the person who prosecutes, or be committed to the house of correction, and kept to hard labour for any term not exceeding three calendar months, nor less than one.

By 7th and 8th Geo. IV. c. 29, s. 33, to kill, wound, or take any house-dove, or pigeon, under circumstances that do not amount to larceny, subjects the offender to a penalty not exceeding two pounds, over and above the value of the bird.

N. B. A man has a right to shoot pigeons as well as rabbits, if he finds them destroying his corn.

The 8th of Geo. I. c. 19, provides, that, if any person shall be liable to any pecuniary penalty, upon conviction before any justice of the peace, respecting game, the prosecutor may, if he think proper, sue for the *whole* of such penalties (2 George III.) in the courts of Westminster; and, if he recover the same, shall be allowed double costs, and no part of such penalty paid to the use of the poor. But such action must be brought within six months after the offence,

and in the name of the attorney-general, or some officer of the stamp duties. *Burn's Inst.*

Dogs.

It is provided, by 10 Geo. III. c. 18, that if any person shall steal *any dog or dogs of any kind or sort whatsoever*, not only from the owner, but from any person to whom such dog or dogs may have been entrusted; or shall *sell, buy, receive, harbour, detain, or keep*, any such dog or dogs, knowing the same to be stolen, every such offender, being thereof convicted, on the oath of *one* witness, or on his own confession, before two justices, shall, for the first offence, forfeit a sum not exceeding thirty, nor less than twenty pounds, at the discretion of such two justices; together with all charges previous to and attending such conviction, to be ascertained by the said justices. And if such penalty is not forthwith paid, the offender shall be committed to the house of correction, or common gaol, for a period of not less than *six*, nor exceeding *twelve* calendar months, or until the said penalties and charges are paid.

If such person be convicted of a second offence, he shall forfeit a sum not exceeding *fifty*, nor less than *thirty* pounds, together with the expense attending such conviction; and, in case of non-payment, be committed to the house of correction, or common gaol, for any time not exceeding *eighteen*, nor less than *twelve* months, or until the fine shall be paid; one moiety of such penalty to the informer, and the other to the poor of the parish where the offence has been committed: and such justices shall order the offender to be publicly whipped within three days after

commitment, in the town wherein such gaol or house of correction shall be, between the hours of twelve and one in the day-time.

A justice of peace, upon information, may grant a warrant to search for any dog or dogs stolen as aforesaid: and in case either dog or his skin shall be found, the said justice shall take and restore such dog or skin to its right owner, and the person in whose possession or custody such dog or skin was found (such person being privy to the theft) shall be liable to the like penalties and punishments as are inflicted on persons convicted of stealing any dog or dogs under this act. However, should any person think himself aggrieved by any thing done in pursuance of this act, he may appeal to the next general quarter-sessions, within *four* days after the cause of complaint shall arise, such appellant giving *fourteen* days' notice in writing of his intention to appeal; and the justices at such sessions shall determine the appeal in a summary way, and award such costs as they think proper; which determination shall be final.

There must certainly be a mistake of *four* for *fourteen*, or *fourteen* for *four*, for an appellant cannot give *fourteen days' notice* within *four days after the cause of complaint.*

The owner of a mischievous dog, if suffered to be at large unmuzzled, may be indicted, and an action for damages will, in such case, lie against him; such action, however, cannot be brought, unless the owner had notice of his having bit some person once before.

An action will also lie against a man for keeping a dog accustomed to bite sheep, provided it can be proved that the owner knew him to be guilty of such

a practice; and his having *once* wounded or killed a sheep, is sufficient to constitute it.

If a dog fall upon another, the owner of the attacked dog may beat, and even kill, his enemy, in order to save him.

Duty on Dogs.

Every person who shall keep any greyhound, hound, pointer, setting-dog, spaniel, lurcher, or terrier, or who shall keep two or more dogs, of whatever description or denomination the same may be, shall annually pay fourteen shillings for each.

And every person who shall inhabit any dwelling-house assessed to any of the duties on inhabited houses, or on windows or lights, and shall keep one dog and no more, not being of the above description, shall pay eight shillings annually for such dog.

The duty does not extend to dogs under six months old; the proof of the age to lie with the owner, on an appeal to the commissioners.

Persons compounding for their hounds are charged thirty-six pounds

Legal Property.

The legal property which qualified persons have, generally continues so long *only* as the game remains *within* the limits of the manor or liberty of the owner; yet it is held, that if, after having been started upon a person's own grounds, it be pursued and killed on those of another, it will, nevertheless, be the property of him who started it, because the possession which he

gained by finding it within his *own liberty* is *continued* by the *immediate* pursuit, 11 *Mod. Rep.* 75. But if it be started on *another man's ground*, and killed there, it will belong to him on whose ground it was killed, this property arising *ratione soli*. *Lord Raym.* 251.

Moreover, if, having been started on another person's ground, it be killed on that of a *third person*, it will belong neither to him on whose ground it was started, nor to him on whose ground it was killed, but to the person who killed it, though he will be guilty of a trespass on the grounds of both the other persons.

But if a stranger start game in the *chase or free warren* of one man, and hunt it into the liberty of another, the property will continue in the owner of the chase or warren, and the keeper may pursue and retake it; for, whilst the keeper pursues it, it does not in law pass into a new liberty.

A Chase

Is a privileged place for the keeping of beasts of chase of royal game, with exclusive power of hunting therein. 2 *Black Com.* 38.

A Gamekeeper.

The 23d of Charles II. c. 22, s. 2, authorizes lords of manors, or other royalties, *not under the degree of an esquire*, to appoint gamekeepers within their manors or royalties, to take and seize all guns, bows, greyhounds, setting-dogs, lurchers, &c. ferrets, trammels, nets, engines, &c. for the purpose of taking and

killing game. This act merely empowers gamekeepers to use means to prevent the illegal destruction of game; but the 5th of Anne, c. 14, s. 4, enables these gamekeepers to kill game upon the manors for which they are deputed, for the use of their master. No certificate on which less than three guineas and a half is chargeable can authorize a gamekeeper to sell game, except on authority of his master; and any gamekeeper so selling game without a written authority may be proceeded against as if he had no certificate at all.

The 9th of Anne, c. 25, prevents the appointment of more than one gamekeeper to one manor, though, prior to this period, the number was unlimited. The act also enjoins that the name of the person appointed shall be registered with the clerk of the peace of the county, and a certificate granted on the payment of one shilling; and to the neglect of such registers a penalty of five pounds is attached. This, again, is rendered null by 25 George III. c. 5, s. 2, which enacts that the deputation of a gamekeeper shall be registered with the clerk of the peace, and a certificate obtained of such registry, under a penalty of twenty pounds. Gamekeepers of the royal family are exempt from this, and the royal family themselves procure no certificate. The following is the form of a gamekeeper's deputation:—

'Know all men by these presents, that I, A. B. of ——, in the county of ——, lord of the manor of ——, in the same county, have nominated, deputed, authorized, and appointed, and by these presents do nominate, depute, authorize, and appoint ——, of ——, to be gamekeeper of and within my said manor of ——, with full power, licence, and authority, to pursue, take, and kill any hare, pheasant, partridge, or other game whatsoever, in and upon my said manor

of ——, for my sole and immediate use and benefit; and also to take and seize all such guns, bows, greyhounds, setting-dogs, lurchers, or other dogs, ferrets, trammels, low-bells, hays, or other nets, hare-pipes, snares, or other engines, for the pursuing, taking, or killing of hares, rabbits, pheasants, partridges, or other game, as shall be used within the precints of my said manor, by any person or persons who by law are prohibited to keep or use the same. In witness whereof I have hereunto set my hand and seal, this — day of ———,

'———, (Seal.)

'Sealed and delivered in the presence of ———, of —— aforesaid.'

It is the duty of a gamekeeper to carry his deputation, as well as his certificate, with him, as without one or other of these, he cannot legally demand the name or certificate of any other person; and, with them, his power in this respect ceases the moment he sets his foot off his own manor.

If, however, a gamekeeper be qualified in his own right, he has no occasion to enter his deputation. But a keeper is not authorized, by any statute, to seize game which he may find in the possession of poachers even on his own manor, though it is lawful for him to take their dogs, nets, or other implements. Also, gamekeepers, if found killing game off the manors for which they are appointed, are liable to the same penalties as unqualified persons. The only difference, in this case, between them is, that a gamekeeper's gun and dogs are not seizable; while those of an unqualified person may be taken.

However, though there is no legal authority for seizing the gun, &c. of a gamekeeper, he is liable, should he be seen *beating only* for game on another

manor, to the penalty of twenty pounds for having no certificate, and also five pounds more as being disqualified.

ON THE GENERAL STRUCTURE OF THE HORSE.

In a work of this nature, designed to discuss the history and relative diseases of both horses and live stock generally, and to give a variety of useful information as well for the practice as the observation of country gentlemen, farmers, and all who are any ways interested in the rearing and cultivation of those animals which an ever bountiful Providence has rendered capable of being domesticated to the service and use of man, it would be of little utility, and indeed foreign to our purpose, to enter into any minute and lengthened detail of the *anatomy* of those animals; and yet, from the nature of diseases, fractures, and other accidents to which they are subject, if the names of certain bones, or the conformation and general structure of particular parts of the system were totally unknown, the reader would be somewhat perplexed in distinguishing one vein, muscle, &c. from another, and thus the treatment of the disease in a measure might be rendered abortive, or the symptoms of one malady in all probability be mistaken for those of another and fatal termination be the consequence.

To remedy this, it is deemed necessary to say a few words on the general structure of the horse, being the animal now under consideration; and to make the subject as explicit as possible, plates will be found in

the work illustrative of the parts especially requisite to be studied.

Plate 2.—The Skeleton, or Bony Structure of the Horse,

Consists of three distinct sections, viz., the *head*, the *trunk*, and the *extremities;* which are again subdivided into several parts or portions.

Bones compose the basis of the animal machine, they are hard and insensible, and of various shapes, according to their situation.

1. *The Head.*—Is composed of the following bones, which a reference to Plate 2 will exemplify. *a*, the os frontis, or forehead; *b*, the nasal bones; *c*, the os lachrymalis; *d*, the jugal or cheek bone; *e*, the superior maxillary, or upper jaw; *f*, that portion which unites with the palatine and jugal bones; *g*, the inferior maxillary bone which contains the upper incisor teeth; *h*, the maxilla posterior, or lower jaw; the dark shade between *a*, *c*, *d*, is the orbit of the eye; *i*, the parietal, or vertical bone; *m*, *n*, the temporal bone, consisting of the squamous and petrous portions; *n*, the petrous division, being a part of the internal ear; *l*, *o*, *p*, the occipital or knoll bone; *o*, marks the occipital elevation; *p*, the cuneiform process; *l*, the condyloid process, marking its junction with the atlas.

2. *The Neck.*—*B*,*B*, the seven cervical vertebræ, or bones of the neck; *a*, the first of these is denominated the *atlas.*

3. *The Spine.*—Is composed of the eighteen dorsal vertebræ, 1—18; the lumber vertebræ, which form the loins, six in number, 1—6; the *sacrum*, five in

number, *a*, *b*, *c*, *d*, *e*, and the coccygis or bones of the tail, 1—15.

4. *The Thorax, Ribs, Shoulder, and Sternum.*—The true ribs are nine in number, 1—9; and are so denominated from their cartilages being united to the sternum; 10—18, mark the false ribs, their cartilages being inserted into each other; *a*, the head which articulates with the transverse process of the first dorsal vertebræ; *b*, the end uniting with the sternum; *C*, the sternum; *D*, the scapula, or shoulder blade; *c*, the neck; *d*, the coracoid process, or apophysis; *g*, the anterior spinatus fossa; *h*, the spine; between *e* and *f*, lies the base, which is the extent of the cartilage of the scapula; between *c* and *e*, is the posterior costa; and between *d* and *f*, lies the anterior costa.

5. *The Fore Legs.*—*E*, the humerus; *i*, the anterior head, or point of the shoulder; *k*, the cervix and head, uniting with the shoulder blade; *l*, the lower head, uniting with the radius; *F*, the ulna; the upper extremity, *m*, forms the olecranon or elbow; *n*, *n*, the radius; *l*, *l*, the carpris or knees, consisting of seven bones. *H*, *H*, the metacarpi, or shank bones; *o*, *o*, the cannons; and *p*, *p*, the small metacarpi; *q*, *q*, the pastern bones; *r*, *r*, the sessamoids; *s*, *s*, the coronets, or little pastern bones; *t*, *t*, the coffin.

6. *The Pelvis, and Hind Legs.*—*I*, the pelvis, made up of three bones; *a*, *b*, *c*, the illium; *d*, the ischium; and *e*, the pubis; that part of the illium *a*, forms the hip or haunch; *g*, the foramen thyroideum; *k*, the femur, or thigh-bone; *h*, the cervix and head, articulating with the lower extremity of the pelvis; *i*, the great throchanter; *k*, *k*, the anterior condyles; *l*, *l*, the posterior condyles; *m*, *m*, the patella, or stifle joints; *n*, *n*, the tibia; *o*, *o*, the fibula; *L*, the tarsis, or hock, consists of six bones; *p*, *p*, forming the

calees, or points of the hock; *M*, the metatarsi; *q*, the cannon, or shank; *r*, *r*, the small metatarsals; *s*, *s*, the pasterns; *t*, *t*, the sessamoids; *t*, *t*, the coronets; *u*, *u*, the coffin bones.

Plate 4.—Viscera of the Horse.

the stomach; *B*, the omentum; *C*, *C*, the lobes of the liver; *D*, the spleen; *E*, *E*, the midrif, or diaphragm; *F*, *F*, the two kidnies; *g*, the tendinous portion of the diaphragm; *h*, the passage of the æsophagus through the chest into the abdomen; *k*, the anterior aorta; *L*, *L*, *L*, *L*, the divided abdominal muscles; *m*, *m*, *m*, *m*, the powerful muscles which bend the neck; *t*, the rings of the cartilages of the windpipe; *K*, the urinary bladder.

Plate 5.—The Leg from the Shank Bone, and the Stomach.

1. *The Leg from the Shank Bone.*—*a*, the shank bone; *b*, the superior, or larger pastern bone; *c*, the inferior, or lesser pastern bone; *d*, the coffin, or foot bone; *e*, the navicular, or nut bone; *f*, the sessamoid bone; *g*, the inner or elastic frog; *h*, the suspensory ligament, inserted into the sessamoid bones; *i*, the large flexor tendon of the leg; *j*, a ligament uniting the sessamoids to the pastern bones; *k*, the short inferior sessamoid ligament; *l*, the insertion of the flexor tendon into the small pastern; *m*, the horny frog; *n*, the insertion of the flexor tendon into the coffin bone; *o*, a ligament uniting the navicular to the coffin bone; *p*, the crust, or wall of the foot; *q*, the sensitive lamina, uniting the crust to the coffin bone; *r*, the

extensor tendon, inserted into the pastern and coffin bones; *s*, *t*, the union of the upper head of the long pastern bone, and the inferior head of the shank or leg bone, forming the fetlock or footlock joint.

2. *The Stomach.*—*a*, the æsophagus, or gullet extending to the stomach; *b*, *b*, the margin which separates the cuticular from the villous coats of the stomach; *c*, the entrance of the gullet into the stomach; *d*, *d*, the cuticular portion of the stomach; *e*, the communication between the stomach and first intestine; *f*, *f*, *f*, the villous or mucous portion of the stomach, in which the food is principally digested; *g*, a small orifice through which a portion of the excretion of the pancreas enters the intestine; *h*, the orifice through which the bile and pancreatic juice passes into the intestine; the two pins mark the two tubes here united.

THE END.

ERRATA.

Page 14, line 13, *for* "muscular," *read* tendinous; p. 44, l. 10, *for* "1 ounce," *read* 6 drachms; p. 48, l. 25, *for* "jejunum," *read* duodenum; p. 82, l. 1, *for* "1 ounce," *read* 5 drachms; p. 86, l. 32, *for* "jugular," *read* carotid; p. 148, l. 18, *for* "8 drachms," *read* 5 drachms; p. 182, lines 6 & 28, *for* "scotum," *read* scrotum; p. 268, l. 3, *for* "expectrance," *read* expectorants.

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